designing in coexistence

La Biennale di Venezia

18. Mostra
Internazionale
di Architettura

Partecipazioni Nazionali

1878

Republika
Hrvatska
Ministarstvo
kulture
i medija
*Republic
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Ministry
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The Croatian pavilion at the 18th International Architecture Exhibition – La Biennale di Venezia is an ode to the ambiances of coexistence of the wild and the domesticated, natural and fabricated, inanimate and living. It originates from the Lonja Wetlands in which dynamic environments have evolved from centuries of symbioses between a landscape in constant flux and communities adapting their lives to it. It documents the slowness of natural change, perspectives of plants and animals, looking in the opposite direction of inevitable crises. Synchronicities of time depend on the viewpoint of the actors, measured in seasons of grazing, annual intercontinental migrations of birds, daily migrations of people, seconds of visitor's reactions, centuries of plants growing, decades of movement of the rivers meandering. What we see is just the superficial trace of these systems.

There is no hierarchy in this flux, and the Lonja Wetlands are taken as a laboratory sample, a lesson for the future, directing towards interaction and reciprocities between what comes from nature and culture, possible in various environments. This sample becomes a backdrop for the discursive segment of the pavilion, an ongoing laboratory documented in real time, exploring futures in practice and education.

Mia Roth, Tonči Čerina, Luka Fatović,
Vedran Kasap, Ozana Ursić,
Niko Mihaljević, Ivica Mitrović

designing in coexistence

REFLECTIONS ON SYSTEMIC CHANGE

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James Auger (ENS Paris Saclay), Harriet Harriss (Pratt Institute, New York), and Martín Ávila (Konstfack, Stockholm), moderated by Ivica Mitrović (Arts Academy, Split) initiating the discursive program of the Croatian pavilion at the 18th International Architecture Exhibition – La Biennale di Venezia, May 2023. Photo: Mia Roth

PREFACE

The Croatian pavilion at the 18th International Architecture Exhibition – La Biennale di Venezia had a twofold presence. The installation in the Arsenale, an evocative construct embodying nature-culture relationships with movable elements enabling discussion and immersion in the pavilion's media. Its reciprocal activity consisted of an ongoing process, of workshops and talks, aiming to disperse the scope of the Biennale to neighbouring contexts, invite discussions on new directions in architecture and design education, display excerpts of ongoing activities we aligned to, and start new ones whose futures will outlast the six-month exhibition's duration. In this retroactive account, we have collected contributions, discussions and reflections, which explored the pavilion's topic further. Extended with the results of the series of workshops, as educational case studies, these processes took place in a network of locations in Europe during the whole year. Over 200 participants drifted through these events, starting in Venice and continuing in Italy, Slovenia and Croatia through five workshops and one public talk. Starting at Politecnico in Milano in February, setting the topic's framework at the Biennale vernissage in Venice in May with an opening discussion, the workshops continued during the summer in collaboration with the Design+ Science Summer School in Ljubljana, returned to the Lonja Wetlands with "feral drifting" by the Open Forest Collective, imagined in Motovun and finished on the Adriatic coast in October, in Split, with the Homo Aquaticus workshop and exhibition. Our Biennale pavilion was thus geographically extended and opened for diverse participants, who joined from all over Europe, Asia, North and South America, Australia and Africa.

The pavilion, talks and workshops aligned to the backdrop of the Lonja Wetland's future-oriented lessons of resilience evolving from adaptation to dramatic change. Challenging both the notion of solving through design as well as that "not to design is the most radical act of design", this environment becomes a lesson for designing with the flux. We believe that design-driven research,

engaged in experimenting with ways of engaging with more-than-human dynamics, based on speculations, and embodied in participatory actions, has the potential to initiate future resiliences and co-habitations serving as both a case-study and a guideline. Moving beyond competition, learning from collaboration on all levels, could show new paths in design and architectural practice in order to make weak stories stronger and those dominant, strong ones weaker. Transferring our tools, methods and approaches, including them in the educational process, becomes a foundation for articulating our role within coexistence on this planet.

The book is divided into two parts: the first collects contributions speculating on the role of design and architecture in making preferable futures, while the second recollects the reflections of the five workshops speculating on the planet's future. The first part of the book assembles the views and backgrounds of those participating in the pavilion's discursive format, starting with the opening discussion in Venice, moderated by the pavilion's discursive program curator Ivica Mitrović with researchers and educators in the fields of design and architecture, James Auger, Martin Ávila and Harriet Harriss, and further contributions by marine biologist and ecologist Mladen Šolić, artist and designer Ligia Oliveira, researcher Michael Smyth, book's editors and pavilion curators Mia Roth and Tonči Čerina, and Ivica Mitrović. In their texts, authors, from various disciplinary views, explore relationships between objects and means, possibilities of relinking design and architecture to support life beyond the human, relational meanings of care, art as a medium fostering stronger connection with nature, challenges of imagining alternative futures, as well as mutualism and cooperation replacing the dominant biological survival principles. The second part of the book collects the workshops which took part during the preparation and course of the Biennale in various locations. Some of the workshops are a part of ongoing series displayed here as an excerpt of current processes the pavilion partnered with in 2023, while others were organized as new activities which have subsequently already gained a life of their own in the

networks they started and exhibitions or festivals they were part of afterwards. The five workshops orbit around the future-oriented lessons of coexistence framed by the pavilion's proposal, exploring the potential of peripheral resilience, non-traditional and non-human-centered interpretations of intelligence, engagement with feral nature through immersive experience, triggering collective imagination and the symbolisms of nature-culture relationships, and finally speculating on possible futures in relation to the sea.

Our intention, using an intensive, condensed and horizontal short workshop format was to reflect on and explore new directions in design and architecture education in order not only to rethink the way we practice but to change our (human-centred) perspective. Workshop-based, multidisciplinary processes offered us the opportunity to try different educational approaches which go beyond existing, slow and constrained curriculum-based, object-oriented academic programs. The outcomes presented in this book are intended as a contribution to an aligned thought, a trigger for continued exploration, as well as a provocation for educational environments, teachers and students interested in investigating and developing the transgressive potential of design and architecture for and beyond the 21st century.

Workshop locations. (W → E: Milano, Venezia, Motovun, Ljubljana, Split, Lonjsko polje)

‘one of the fundamental problems we have in design today relates to the celebration of objects. very rarely do we examine and evaluate the methods, the means and the systems that bring these objects to fruition.’

— james auger

Excerpts from the opening discussion with James Auger (ENS Paris Saclay), Harriet Harriss (Pratt Institute, New York), and Martín Ávila (Konstfack, Stockholm), moderated by Ivica Mitrović (Arts Academy, Split) initiating the discursive program of the Croatian pavilion at the 18th International Architecture Exhibition – La Biennale di Venezia, in Venice, May 2023.

‘architects as a profession are – by definition – in service to the public. I think that we’ve lost that mandate.’

— harriet harriss

‘we are part of a
global system, based
on extractivism, that
acknowledges very few
parameters, mostly economic,
linear, and human-centred.
we need to acknowledge
multiple parameters,
which are based on
biophysical constraints.’

— martin ávila

‘we think that, as humans, our actions are always going to generate solutions, when, in fact, almost all our ecological actions so far have created problems.’

— harriet harriss

‘we’ve spent the entire 20th century convincing people how to dress, how to drive, how to behave, how to consume. we’ve created a world full of consumers. it’s now a matter of dismantling this situation and to change what and how people consume. that, for me, is the biggest design challenge.’

— james auger

PART ONE

reflections on designing in coexistence

futures, speculations and education

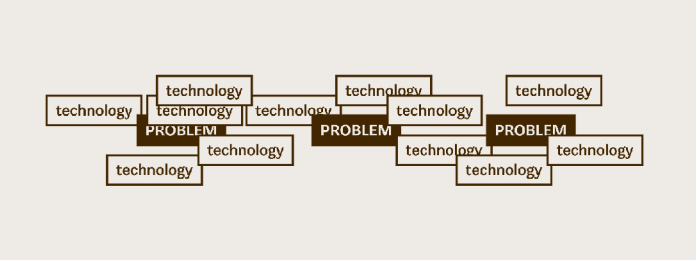
ivica mitrović

the past

Design and architecture, since their rapid development during the 20th century, have played an uncritical supporting role to industry and the applications of technology in our everyday life.[01] Most of the time, without reflecting on the implications of their actions. Unfortunately, they have lost their connection with the original modernistic principles, such as a holistic view of the world and ecosystems and the support of technology and science for adaptation to and taking care of existing ecosystems. As the drivers of consumerism, architecture and design had their role in the foundations of the so-called Anthropocene (or Capitalocene), which has, more than ever in human history, brought extreme catastrophic scenarios that are likely to take place in the near future.[02] This implies changes in our living environment but also social, economic and political relationships, changing power relations, bringing new social inequalities and new distributions of opportunities. Nature does not care about us. It will already adapt to the changes. The microorganisms from which life on Earth started are probably the last to remain, as hope for some new life. The accumulated influence of humans on climate change has already been determined several centuries in advance. Our activities have defined our successor's futures. The time of comfortable life and extraction of natural resources has passed.

Human-centred design continues to contribute to global extractivism and resource exploitation through solutionism and failed manufacturing, production, and distribution systems. This paradigm in design and architecture, referenced as "Western melancholy", is rooted in a worldview that "we have always been and we continue to resolve problems with technology" and that "the

future will be hyper-ultra-turbo interesting!".[03] This belief celebrates the Western position where humans evolved from natural ecosystems into creators, and in the name of progress and growth, they can and must change nature, while resolving the consequences of their actions using science and technology. This is based on the idea of a civilization that is separated from nature, which, through the industrial revolution and the development of a capitalistic economic system, has led the planet to its current state in the Anthropocene. It is embodied in an architectural and design practice which has "consistently failed to imagine future possibilities beyond globalized capital".[04] Unfortunately, these actions in making the future have resulted in unmaking other futures.[05] This has been broadly criticised, for example, by *URSULA LE GUIN* as "techo-heroic"[06] or by *DONNA HARAWAY* elsewhere[07].



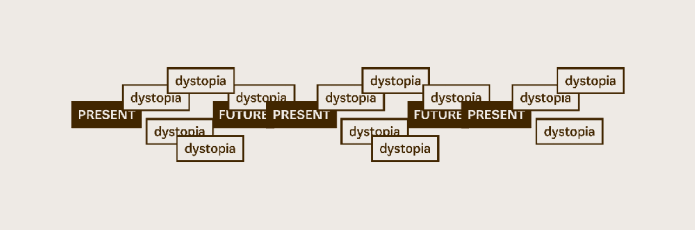
"Western Melancholy" (Mitrović & Šuran, 2018)

Climate change is the most significant present catastrophe, but we also face a series of crises that run parallel, such as the pandemic, the current threat of global nuclear war, permanent migrant crises, and others. All these crises are intertwined and they reveal the fragility of existing infrastructures and ways of life, bringing us visions

of dystopian futures, facing the fact that the future did not turn out as we expected. For instance, for someone who was a teen in the 1980s, the future looked exciting, e.g. as in the series of films "Back to the Future" by *ROBERT ZEMECKIS* and *BOB GALE,* which brought the idea of exciting tech gadgets apparently available to everyone. Unfortunately, the future today is getting closer to the dystopian one of *P.D. JAMES* and *ALFONSO CUARÓN* from "Children of Man". We are becoming scared of the future, we are afraid of what tomorrow will bring – is it a new disaster or a new dystopia that is waiting for us in the near future. At the same time, we are increasingly nostalgic for a past where we had hope for a better future and when it looked like we had control over the future. Unfortunately, "our" future is less and less possible, limited by our past, shaped by the failure of modernistic ideals of the holistic views of society and the planet.

MICHAEL SMYTH discusses *ANTHONY DUNNE'S* concept of "broken futures" as a promise of past "peak" futures that have failed to be delivered, leaving us with just "pale shadows".[08] For Smyth, we are seemingly bound to the "spectres of the past", utopian imaginations as "the world of flying cars and jet packs for all, each somehow encapsulating the promise of a future so far removed from the everyday reality and so beloved of fictional secret agents of the time".[09] Consequently, looking in the everyday context, at the general level, we are witnessing a disconnection from the future, giving the impression that the future is hostile and that there is no place for us in it[10], resulting in the feeling that we do not want to be part of such a future anymore. Of course, there are still glimpses of desirable, positive futures, but those futures are most of the time distant and elitist, not including us. The diagnosis has been made – we have gradually given up on the future.[11] Futures colonized by

the dominant economic model have led to the fact that it seems we have lost the ability to imagine alternatives in our everyday life, what is possible, what is probable, and what is preferable. The dominance of and demand for dystopian scenarios in popular culture in the last two decades has led to people considering catastrophic scenarios as inevitable, moving away from imagining different futures, and becoming passive instead of proactive. *TONY FRY* points out that the future we create never starts from zero, an empty space waiting for us to fill it, but it is pre-colonized by our past and other visions of the future.[12] The present, referred to as dystopian futures, most often generates the same dystopian futures again.[13]



"Temporal loop" (Mitrović & Šuran, 2018)

The once-dominant world model, reveals itself as fragile, broken and highly unsustainable, showing that its future continuation is uncertain. This raises questions about how we represent it, how we adapt to it or challenge it, and how to imagine and speculate on other possible, probable and preferred worlds. There is a need for all professions to look into more radical and innovative practices and methods. Today, the majority of designers and architects still use tools, methods and approaches which seemingly do not fit the present reality anymore. Current methods have largely evolved from models established

in the early 20th century, adopting a global approach towards resources, solutions, and systems of production and distribution, and as such, seem inappropriate for the world of today. Design and architectural education still do not include all necessary variables (or voices) in the educational process. We still design for today, not for tomorrow, still work for and within the dominant system, and still teach design as the world is. We are still not ready for radical changes.

Could design and architecture, through practices from pragmatic to speculative, from discursive to activist, and as multidisciplinarity activities, bring reflexive, imaginative, and generative pathways toward different futures? Both design and architecture, as fields of practice, have the potential to detect, mediate and generate new relations and to encourage radical imagination. This potential has been documented and discussed over more than 20 years of speculative design and related critical and future-orientated practices.[14] Those practices have contributed to the development of design and architecture as worldmaking agents, bringing possibilities in exploring diverse versions of the world, helping us understand our environments and develop our capabilities to transform them. Speculative design has been used successfully as an experimental environment to test different hypotheses about our lives in the future.

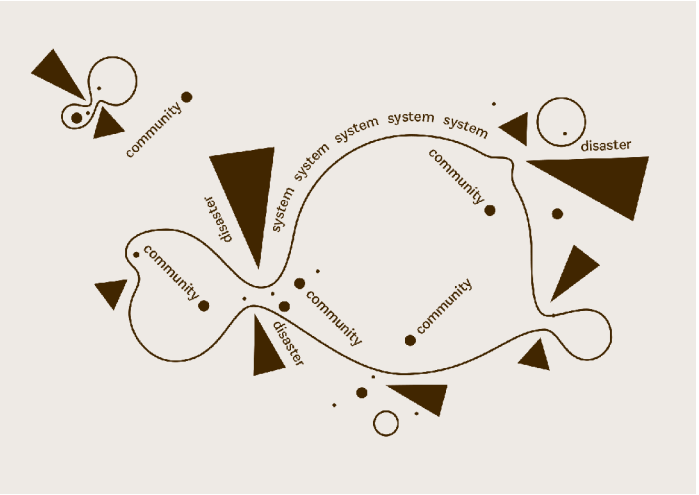
the present

Speculative design has been both praised and criticized for its ability to create future dystopias as a kind of "salvation" or a freash start, with the hope that such circumstances, as a "tabula rasa", may potentially lead to spontaneous new transgressions of society. However, this approach neglects the pressing crises of the present moment. Looking back at speculative practice, there are many projects dealing with dystopian futures, including disasters such as diseases, wars, climate disasters, totalitarian states, technological dystopias, etc. Arguments like "we told you so", "you didn't prepare" or "you did nothing to avoid this" are now used within the speculative community to critique society's status quo over the many years. Those fatalistic views, based on the thoughts that there is nothing possible to do now, have also led to despair and toward a state of practice where dystopia becomes the new normality.

Current-day speculative, critical, and future-oriented approaches in design and architecture seek to encourage action and achieve changes in the real world. They reflect a series of criticisms that these practices have been appropriated by the consumer society in "imagining luxury fantasies for the one percent, whether it is in the form of lab-grown meat, extra-planetary colonization, or augmented interfaces for consumer electronic".[15] These practices do not presume to change the world in one fell swoop, nor do they hope to eradicate prevalent socio-economic structures overnight. Yet, they can indeed initiate a series of bottom-up changes and restore hope in the future and reimagine the unseen horizons it holds. To achieve this, speculative practice works to gradually replace the idea of "predicting" the future by creating possible paths and actionable plans needed to

achieve a better, i.e. preferable future. As a pedagogical tool in an educational curriculum, they could help students and educators to understand the context and consequences of their design practice. The interplay between tensions that educators and students need to address when designing speculations can open paths of critical reflection that lead to informed experimentation, to better conceptualise, deploy and evaluate not only designs but also the debates that surround them and the audiences that encounter them.[16]

We see around us a growing number of design and architecture projects which are free from any need for glamorous, self-serving provocativeness, relieved by visions of a technology-centred (techno-heroic) future.[17] *ARTURO ESCOBAR* described this shift as the progressive transformation in the nature of design, moving from a process primarily led by experts to produce various objects and services suitable for the prevailing socio-economic order, which itself remains unexamined and unchallenged, towards a new kind of design practice rooted in participation, aimed at society, and valuing an openness which allows questioning and re-evaluation of the most commonly accepted ways of conducting business and managing production and consumption.[18] These bottom-up and participative approaches[19] are important since they transform the prevailing understanding of design and architecture as human-centred and Western-centred disciplines, based on the notion of the designer as an author accompanied by the mystification of design practice (and designed objects). A designer is (and should be) the one who transfers methods, tools and techniques to the community, while also facilitating understanding of the processes happening around us and revealing the anatomy of the system itself.



A Practicum of Resilience: Split, 2021
(Mitrović & Šuran, 2021)

However, those participatory approaches in design and architecture still operate within the same system, whether it is the dominant global economic capitalist system, energy, communication, education system or something else. Without questioning the supply chains of food, water, energy and others, we lack insights into how those systems work because they become hidden from us. Additionally, despite their participatory nature, such practices often involve only privileged participants (activists, cultural workers, academics, NGOs and so on) and do not reach those who are marginalised in society. When viewed as a whole, the current "system", though repeatedly perturbed and shaken by various disasters, remains still fairly homogeneous and resistant to change. The challenge is to mitigate and unite often disparate practices, bridge the conceptual gap between global and local action, and mediate between central and marginal,

toward creating a new global "utopian imaginarium". How to work together on devising practical, actionable pathways toward the goal of systemic transformation and transition?

In the long history of living on this planet, people have become accustomed to living with crises and disasters. Looking from a Western perspective, after years of the Western's world "prosperity", disasters are becoming the new normality, the reality in which people must build new resilience. *SUPERFLUX* stressed that "we need to evoke in people the hope that lies beneath the anxiety and we are more resilient and more able than we are being led to believe and that this resilience cannot, however, be accessed within the anthropocentric paradigm".[20] Studying autonomous resilient communities in our (Adriatic) region gave us insight into those small communities used to living and surviving on the margins of the system, which maybe could have more chances to survive in such futures.[21] Our discussions with these communities have shown how important education is, especially direct and informal education, in achieving resilience. On a global level, we repeatedly see new (post) disaster landscapes, novel forms of communities, resistances, agencies and innovations for building different and diverse everyday lives.[22]

The Croatian pavilion at 18th International Architecture Exhibition – La Biennale di Venezia, titled "Same as it Ever Was", is an ode to the ambiences of coexistence of the wild and the domesticated, natural and fabricated, inanimate and living. It evolves from documenting the Lonja Wetlands, one of the largest protected aquifers of Europe, in which dynamic environments have evolved from centuries of symbioses between a landscape in constant flux and communities adapting their lives to it.[23] If we take a long-term perspective, our lives are comparable

to those of butterflies or insects in the Lonja Wetlands, which last a short time in our frames of reference. Nature and evolution move slowly, over millennia, millions of years. If we take small transformative action steps now, persistently and systematically, we could expect long-term changes, first small ones, and later in possible synergy with other such movements, changes that can still bring hope for a positive future. For *EZIO MANZINI,* large-scale change is only possible as a result of a cumulative build-up of small-scale radical changes.[24] The same strategy has been articulated with different wording by the *TROJAN HORSE COLLECTIVE,* who claim that concrete action need not take the form of grand intervention, but that modest gestures may suffice.[25] Manzini, however, notes that these various (bottom-up, peripheral) changes, the loci of the most interesting social developments of and the origin points of novel ideas and behaviours with the potential to become widespread, too often remain within the confines of the very system they labour to upheave.[26]

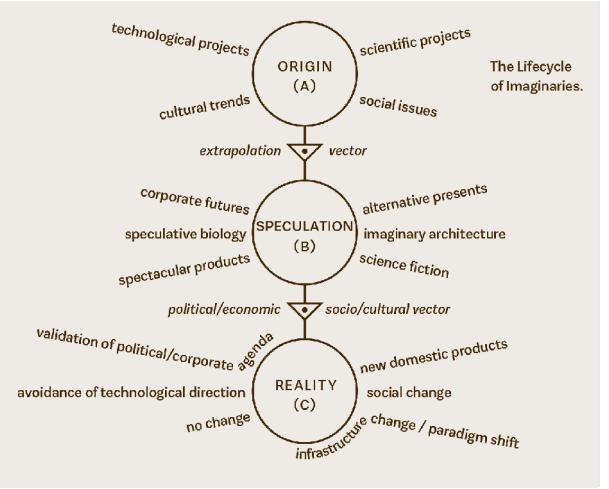
To effect real change, what is needed is, above all, continuity and coordination among those various small-scale movements. *ANA JEINIĆ* calls for an "emancipatory speculative design" philosophy, a kind of open-ended utopian collective praxis in search of new means of production and mediation in design, and of new forms of synergy with both institutional and extra-institutional subjects.[27] Ezio Manzini explores the range of potential of such transformative change and points out that a significant number of social movements that have over time attained public recognition, and have been subject to public administrative regulation, started as bottom-up initiatives, launched and maintained by small groups of individuals, in a rather activist style, often working out of reach of the legal system.[28]

Despite criticism that throughout history, avant-garde movements in design and architecture have not achieved significant social changes, that they either disappeared or were appropriated by the system, they have still left behind them strong foundations, which build up the practice, especially in the educational context. Speculative practice remains a valuable tool for understanding the processes taking place around us and showing us some possible alternative action paths to the future. By speculating about the future, we begin to act now and in the present. Although speculative projects do not provide solutions to "wicked problems," they have introduced new approaches, methods, and tools that are now available in our designer's toolbox, enabling us to act towards different futures.

Through the *SPECULATIVEEDU* project, which dealt with education in the context of speculative design and related practices, a line of guidelines was proposed as new directions that could lead to a "beyond" or "post" speculative design practice.[29] Taking into account more than 20 years of practice and strong criticisms and reflections, these challenges were detected to open up new possibilities for design to contribute to transformative changes, starting with education. These guidelines deal with the challenges that if we are going to reclaim the future we need to start from the present and we should start with actions "now and here". That we have to focus on the "real world" and remove ourselves from the glamorous dystopian world. That we could learn a lot from looking at margins in a periphery and that design practice is in collaborations, and it is primarily local. As well that we should not forget that design always has consequences and that speculation is our duty, not a privilege.

the future

Speculative and related design practices, directed towards the future and new social contexts and organizations, reflect on the historical misconceptions of modernism. *CAMERON TONKINWISE* emphasises that the current role of speculative design is to provide answers to the mistakes of the modernist project and to re-materialize its visions of a radically different future in our everyday lives.[30] Not rejecting but refocusing and recontextualising the use of science and technology in our relationship with the planet. The neo-colonization of the future could be avoided by building a future based on inclusion and solidarity, looking from the interspecies perspective, not only at the level of the individual communities but also at the global, planetary level. However, given the limited time we have left to react to climate change, the only way forward is to act immediately, to start here and now to initiate social changes, even starting from toxic lands and destroyed landscapes. A radical change in our relationship with nature is necessary to rebuild destroyed ecosystems. Movements like permaculture and degrowth, including the most radical ones such as "pirate care"[31], are certainly driving change from the bottom-up and they offer models of different futures. The goals of the transition movements largely coincide with the goals mentioned here (resilience, transition, social changes, etc.). They generate projects that build a better society and future and we can learn a lot from them. However, what we can and should offer through design and architecture is a step further, by coming up with visions and scenarios that go beyond, that bring inspiration, but also new possible approaches and concrete pathways.



The Lifecyle od Imaginaries
(SpeculativeEdu, 2021)

The editorial of the *TEMES DE DISSENY* journal titled "Emerging Habitats. Design as a Worldmaking Agent" stated that "design is and has to be a transdisciplinary field in which the main aim is not to attempt to solve the 'wicked problems' we face in the present, nor to 'divinate' the future, but instead to identify shared concerns within these present problematics, and to devise conceptual grounds and transversal methods and approaches that potentialize the productive aspects of design".[32] Non-conventional modes of design, including speculative, transitional, pluriversal and related approaches could imagine pathways in transition from present states and conditions to long-term desirable futures.

Speculative approaches have the potential to intuit and speculate, rather than predict, solve or correct. They deal with the different economic and social models,

moving away from the idea that well-being is only possible with economic growth and looking for radical change in relationship with nature. Challenging the widespread view that cooperation is less important than competition.[33] Going beyond just designing imaginary worlds of the future toward how to design for it and design for the world what would be. Discussing and detecting the constraints that stop from doing different designs to investigate how design methods could change to adapt to the current crises and offer "alter-natives"[34].

Consequently, the possible path of the future trajectory for design and architecture can be seen as a continuation of efforts on the local level, working in a close connection to the "social periphery", or margins, in the local context that one has come to know so closely.[35] Although these activities, initiated and limited to the local-level change, could look like a kind of personal or group psychotherapy or self-help ritual that restore hope for the future, they are extremely important as a seed of change. These efforts should aim to provide practitioners and educators with a toolbox of methods, tools, and techniques that can be transferred to future generations, with the hope that they will start new activities, bring a broader spectrum of participants, and exponentially increase novel approaches focused on change.

This process could bring about needed positive visions and hopes, new imaginations of the worlds of the future, and new "real utopias". Looking back, most historical utopias have been built as important and successful critics of the social, economic, political or technological context of a particular time. Unfortunately, we have also seen utopian projects that, in the end, have failed as closed systems or ended up as elitist or autocratic communities. We could learn from those failed projects as a consequence of the world's particular social and political

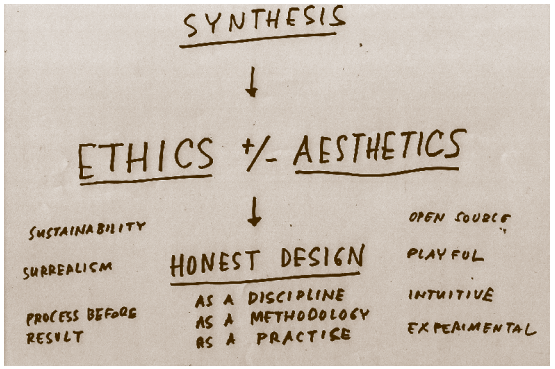
state. In the search for alternative paths to dystopian ones, *JAMES AUGER* and *JULIAN HANNA* discuss "atopia" as a direction that "rejects both the escapist fantasy of utopia and the nihilism of dystopia, favouring instead a conceptual middle ground from which real-world conditions can be productively engaged and challenged".[36]

the hope

MARK FISHER, in his famous, but gloomy book, describes "capitalist realism" as the reality in which we live and from which there seems to be no way out, no future.[37] However, at the end of the book, he concludes that "even glimmers of alternative political and economic possibilities can have a disproportionately great effect" and that "the tiniest event can tear a hole in the grey curtain of reaction which has marked the horizons of possibility under capitalist realism". Going beyond rationally based forecasting, which is most of the time limited to the current system, speculations could open those horizons.

LESLEY LOKKO, the curator of 2023 International Architecture Exhibition – La Biennale di Venezia included in her call a strong component of education as "a kind of laboratory of the future, a time and space in which speculations about the discipline's relevance to this world — and the world to come — take place".[38] We should look at our universities as "laboratories" embodying continuous interdisciplinary processes realized through situated education, focused on futures. The topics to be explored are numerous, and we primarily look at them from the perspective of how they impact education and how education in design and architecture can respond to the demands and challenges of the 21st century.

- How to imagine alternatives, what is possible, what is probable, and what is desirable?
- How to redefine our relationship with nature, is it possible to create a new coexistence as a path for different futures?
- How to learn from and respect marginal communities used to living and surviving in/with nature?
- How can we work together more effectively as one towards the goal of achieving radical imagination and systemic transformation and transition?
- How could small steps bring long-term changes in the near future, or do we need a radical change now?
- What are the constraints that stop us from doing different designs and architecture for the future?
- What approaches, tools, methods and mechanisms could give transformative power to the design and architectural practice?



The Aquatics (Interakcije 2023: Homo Aquaticus Workshop, 2023)

In "hard times coming", we hope that educators and students together can be "realists of a larger reality" from Ursula Le Guin's call[39]. Future visionaries who will imagine "real grounds for hope" and how the realities of people could be different. We are interested in how education can initiate changes and what actions support this process. Redefining our relationship with the changing nature, shifting from competition to cooperation, needs different approaches, tools, methods and mechanisms. Is it possible, and how is it possible, to reclaim positive visions of the future and what is the role of education in this process? Starting from the worldmaking potential of design, urbanism, architecture and art (including other related disciplines and practices), we are investigating those challenges, here, from and in (but not only) the specific context of Southeast Europe and the Mediterranean, using speculations in real-world contexts by addressing the needs of diverse local actors and to reflect the impacts of omnipresent climate changes. Holistically looking at the world, starting here and now, from the local level to a broader context.

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to care is to know

mia roth &
tonči čerina

Understanding fragile equilibria of systems we are a part of is fundamental to future survival. Processes conditioning or endangering dynamic systems cause change as a result of nature's adaptation to them, though their slowness makes them difficult to detect, hence they react with required promptness. While everything may seem to be the same as it ever was, drastic change is happening in slow motion. In a comforting counter-reaction, and equally slowly, ecosystems are seeking to regain balance: "...the passage of nature is exhibited equally in spatial transition as well as in temporal transition. It is in virtue of its passage that nature is always moving on."[01] Process philosophers contend perceiving the world as a network of interconnected processes, of which we constitute an integral part. Within this framework, our choices and actions bear consequences for the world around us, promoting the notion of interdependence over independence, mutualism over survival of the strongest. The sudden understanding of our association with Earth – proper noun, or Gaia – the living organism we are a part of,[02] was prompted by lockdown in an empirical apprehension of nature's self-healing capacity, without our intervention (or importance of our survival for that matter). This realisation underscores the imperative of education based on terrestrial causal systems. The threats to survival of any species or ecosystem becomes the cause of their dismissal, the measures planned for the long run too ineffective and incremental. Embodying this invisible urgency becomes a fundamental preoccupation for designerly practice, aligning its goals in education. The notion of "critical care"[03] challenges the conventional nature-culture divide within the constructed environment, advocating for a comprehensive and inclusive practice that redefines the role of architecture. It is within this framework that the questions raised within the Croatian

pavilion of the 18th International Architecture Exhibition – La Biennale di Venezia were raised and aimed to be answered through experience and geographically dispersed educational exercises.

Lonja Wetlands, September 2020. Photo: Mia Roth

Architecture, like many other sectors with intrinsic drives of "producing the new," significantly contributes to pollution, exploitation and detachment from connections with others and nature. The looming question for practitioners is: can solving global problems be facilitated through redefined architectural practice? Can architecture aid in a new understanding of nature-culture equilibria, or sustainable symbioses? A project of a visitor infrastructure in the Lonja Wetlands, one of the largest and best-protected natural aquifers in Europe, asks how architecture can contribute to a new understanding of this balance, educating both for preservation and future symbioses. The dispersed infrastructure learns from and grafts into the local, introducing constructs aimed at changing behaviour through education and awareness.

It asks how the design of buildings and infrastructures can become tools of transforming the way people interact with nature, and which formal languages facilitate this interaction. Exploring the unique protected landscape of one of Europe's largest wetlands requires time and understanding of processes that are not immediately apparent. The Lonja Wetlands go through radical changes over the course of a year – the rivers flood after winter, rendering the plains into a sequence of shallow liquid mirrors in which fish breed in spring. The retracting waters leave little swarming lakes – a feast for the many bird species. After the rivers return to their course, the vast grassy plains are the reign of livestock which roam freely. Centuries of dynamic coexistence of wild, domesticated and human species created expressions of a cultural heritage which grew from a symbiotic relationship of an everchanging landscape and communities synchronising their way of life with it. This is an environment in which change and quest for survival creates a constant dynamic of adaptation, even violent change, yet continues surviving in a slow, continuous and harmonious flow with no hierarchy. Many transient actors move and travel through this landscape. Their importance cannot be communicated through a single image or phenomenon, nor can the slowness of their seasonal change be experienced in a single visit. This environment's significance lies within the symbioses of many species, of that which is unseen.

Lonja Wetlands during flooding, spring 2023.
Photo: Tonči Čerina

Experiencing the wetlands around the rivers Sava and Lonja is planned through a network of entry-points, visitor centres and observatories placed within the nature park. The visitor centre in the village of Osekovo samples rural morphologies, drawing from the familiar, establishing a new social focus. In an effort to expose the continuous changes this natural environment goes through even closer, the visitor infrastructure included a network of observatories. They serve as markers and vistas for viewing birds, free-range livestock, wildlife and waters. The observatories are a ludic element of the landscape, a new species which connotes various species and forms. Their biomorphic shapes are not explicit, yet embody movement, organic form, traditional tools, echoing the locally familiar. In their own dialogue, free from direct references, they speak a unique language: a part of the landscape, mythologised local beings, frozen in their movement. In a non-hierarchical environment, these new points provide a fleeting identity, a device for attracting,

the lessons gained upon arrival, inviting return, transitioning to knowing. Initially intended as infrastructure of visual consumption, they have evolved into entities carrying their own meaning and possibilities: a communication tool beyond looking, towers from which one observes are transformed into actors and active participants. Like a new species introduced to establish communication, one adapts their behaviours to their presence. They are not literal memories or mimicries but exist on the border of the known and the subconsciously recognisable, creating desire to approach, an inadvertent introduction to the lesson of the wetlands. Observatories become devices for an intense connection, amplifiers of senses and experiences. The immovable beings blur the borders between languages of the anthropogenic and the natural, becoming didactic instruments of future care. These devices, as well as the dynamic coexistence within the wetlands, are taken as a departure point for speculating on preferable future paths, alternatives, and models of cohabitation.

Observatory in Osekovo.
Photo: Marko Mihaljević

In the context of the topic of the Biennale[04], this lesson of coexisting with an environment of constant flux becomes a backdrop for examining possible paths of resilience – one which does not survive against radical natural change, or seek to tame it, but rather one that learns to move with it. To act towards achieving the goal of preserving terrestrial ecosystems firstly requires an understanding of what a harmonious environment is, and this particular environment serves witness to a concurrence that still exists. It does not glorify an arcadian past, yet shows an example of productive flowing with changing cultures and behaviours which favour adaptation over conquest. Considering the logistical endeavour of producing pavilions carrying valuable messages, brought into a single spot for a short duration of six months, is challenged in the concept of the pavilion, which carries a twofold presence. In its physical aspect, it creates an immersive environment evoking the phenomena of the wetlands, and also introduces a dispersed discursive format exhibiting fragments of ongoing educational processes, as well as instigating new ones through workshops conducted over the course of the Biennale in various locations. Responding to *LESLEY LOKKO'S* framing of the topic, we invited and displayed excerpts of a continuous interdisciplinary process realised through future-oriented, situated education.

The physical part of the pavilion explores embodiment of complex issues developed in the theoretical and situated, discursive activities complementing it. The installation includes physical and virtual segments sampling and paraphrasing the familiar, relying on elementary recognition based on collective memories. A paraphrase of one of the observatories is defined by woven ash wood, a native of the wetlands, and hovers within a regular grid. Both are interdependent, structurally

supporting each other. The installation houses a sparse, percussive digital composition by *NIKO MIHALJEVIĆ* referring to the fauna of the wetlands: an imaginary musical dialogue between three idle storks. Movable elements designed by *VEDRAN KASAP* and *OZANA URSIĆ* can be configured in various seating arrangements inviting interaction and immersion. The media of the pavilion are not literal memories or mimicries but exist on the border of the known and the subconsciously recognisable, triggering desire to approach. It acts as a device to briefly change perspective, an embodiment of a theme better understood by an experience in space than a mere statistic.

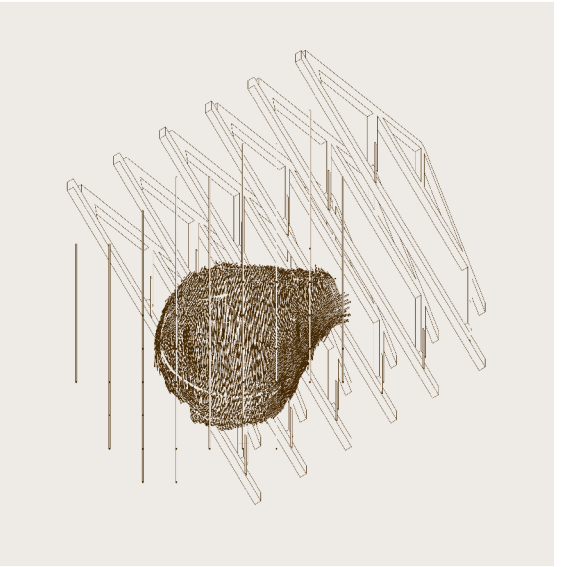
Observatory in Repušnica.
Photo: Marko Mihaljević

Convinced, however, that transformation of the future relies on education, the pavilion's workshops and discussions become the farther-reaching goal of the pavilion, the installation serving as its sign aligned to the concepts of "presence"[05]. Provoking the desire to gain this knowledge comes through architectural intervention which

communicates on levels of inherited collective memories and subconscious reading. The explorations in educational formats and topics serve as a sensitising agent; a mechanism to question origins of one's creative intentions, as well as their meaning and impacts in a future for all life-forms. Furthermore, they triggered mechanisms of getting in touch with the individual and collective subconscious with inherited memories and shared impulses of various beings. The educational aspect was the underlying preoccupation of the team consisting of architects, designers and artists from five universities, joined in workshops and talks by those teaching in many more. Tackled in different ways, in the concept of the Biennale participation, they aligned into a single process continuously communicated with a broad auditorium.

Both the physical and non-physical segments of the Biennale pavilion aimed to highlight interconnectedness. The wetlands point to the capacity of nature's self-healing without our intervention or survival. In its physical segment, it opens the discussion on how spaces communicate and embody connections to our origins, and the pavilion's network of workshops and talks ask for continuous education and speculation on causal systems. The structure itself was produced in Croatia and will travel back to live an alternative use at its point of origin, while echoes of discussions brought together in this volume serve as notes on – and for – the future.

The Croatian pavilion, 18th International Architecture Exhibition – La Biennale di Venezia. Photo: Bosnić+Dorotić



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considered means and questioned ends?

james auger

means and ends

This text is about designed objects, or more specifically "the superlative *object*" – objects of design that somehow achieve an elevated status.[01] The central thesis is that by placing such a high cultural value on the object, the systems and resources behind its realisation are largely allowed to be hidden from view, ignored or unconsidered. This elision gives mainstream design an enormous advantage over alternative approaches, as all the available *means* – global resources, neo-liberal labour practices, highly sophisticated manufacturing and marketing methods, intricate supply chains and the latest technological advances – can be exploited to achieve the celebrated *end*. How can more ethical or ecological design processes compete – when only the end product, the superlative object, is the subject of evaluation?

In "Mythologies", in 1957, *ROLAND BARTHES* describes the elevation of object status through the example of the Citroën DS, the "Goddess" – "a superlative *object*". He comments on the seamless perfection of the vehicle, likening it to the "unbroken metal" of science-fiction spaceships and even to the smooth and seamless robes worn by Christ. Barthes' emphatic words somewhat anticipated the sealed and sacred nature of contemporary status objects, in the sense that seams, he argues, reveal the hand of the (human) maker, therefore suggesting that the DS is *beyond* human – an immaculate *conception* (the closest French translation of design) and the ultimate dislocation of the object from its manufacture.[02] Similar claims could be made on behalf of the latest Apple product (perhaps the best example of a contemporary superlative object), based on the complete absence of all visible forms of assembly (and from a repair point of view, disassembly).

Citroen DS19: Harry Pot / Anefo, CCO,
via Wikimedia Commons

In 1972, *CHARLES EAMES* provided the following description of design: "[a] plan for arranging elements in such a way as to best accomplish a particular purpose."[03] From this starting point we can make the following observations:

① *The verb "design" has become increasingly separated from the verb "make". As a consequence, the practice of PLANNING has become reduced to moving shapes around on a screen, whilst the ARRANGING of (physical) ELEMENTS happens in increasingly complex technical systems. Design is dislocated from making.*

The designers of today's superlative objects follow both *MORRIS*[04] and *BEL GEDDES'S*[05] lead in that they remain obsessively connected to the manufacturing process. However, the complexity and expense of the machines that do the making have grown exponentially. In a video showing the manufacturing process of the iPhone 5, designer *JONY IVE* describes how "with the parts on a conveyor, two high-powered cameras take

pictures of the [phone] housing, an instantaneous analysis is done and then the best match out of a possible 725 cuts is determined." He goes on to state that the Apple belief is that "going to such extreme lengths is the only way that we can deliver this level of quality".[06] Whilst Apple's approach clearly leads to the elevated status of their products, the machinery at their disposal gives them an enormous advantage over those with humbler tools.

② *The material ELEMENTS used in contemporary designed artefacts (e.g., rare earths) have become increasingly global and out of reach of the individual.*

In this case we can trace the origins of the designer's use of elements back to the colonial era. *CHANDLER* notes that at the time of the 1855 World's Fair, "the French attitude is a mixture of pure greed and the dawning sense of the 'civilizing mission' of France: Africa will supply the raw materials; and in return, France will supply the most precious of all commodities: French civilization".[07] Turning again to the iPhone, it comprises 75 of 118 elements from the periodic table (the human body is made up of around 30). In an article for the Los Angeles Times, *BRIAN MERCHANT* described the pulverizing of an iPhone and then analysing the resulting dust using mass spectrometry, X-ray fluorescence and infrared analysis.[08] He suggests that to obtain the 100 or so grams of minerals found in a single iPhone, miners around the world have to dig, dynamite, chip and process their way through about 75 pounds of rock on nearly every continent.

Xinjiang rare Earth Mine: Peter Chou Kee Liu, Attribution-NonCommercial-NoDerivs 2.0 Generic (CC BY-NC-ND 2.0)

③ *The functional* PURPOSE *of contemporary designed artefacts has become increasingly dependent on global infrastructure systems, thus perpetuating established power structures.*

In "The History of the Future", *GOODMAN* describes how the invention of electricity was instrumental in laying the groundwork for the coming machine age.[09] By the 1940s, 90% of American homes were connected to the electricity grid. This in turn led to many new domestic products – all electrically standardised via the sockets they plugged into, and all dependent on the expanding infrastructure. Contemporary products today are reliant on far more complex systems than the electricity grid; for example, the GPS system on mobile phones is owned by the US Government and operated by the United States Air Force. Anything from thermostats (e.g., Nest) to vehicles (e.g., Tesla) are increasingly reliant on, and controlled by, connection to the internet.

④ *The* aesthetic PURPOSE *of contemporary designed artefacts has become deeply entwined with the manipulation of human desires via marketing practices – a process whose complexity has increased exponentially with the layering on of technological manipulation through big data, surveillance, and algorithmic control.*[10]

This is not a new practice. *REDGRAVE* likened the French Goods at the 1855 Paris Exhibition to the "gilded cakes in the booths of our country fairs, no longer for use, but to attract customers".[11] In "Objects of Desire", *ADRIAN FORTY* affirms that, for a product to be successful, it must incorporate the ideas that will make it marketable. [12] This results in manufacturing goods "embodying innumerable myths about the world, myths which in time come to seem as real as the products in which they are embedded". Contemporary superlative objects typically gain their status not from how they look or function, but rather what they represent (and this is notoriously fickle).

Foo Fighters on stage at Apple iPhone 5 launch: Textlad, Attribution-NonCommercial-NoDerivs 2.0 Generic (CC BY-NC-ND 2.0)

⑤ *The PLANS for designing contemporary artefacts are typically iterative in nature. This facilitates and maintains the current approach to economic growth via generational products.*

According to the economist *ROBERT HEILBRONER*, "All inventions and innovations … appear essentially incremental, evolutionary. If nature makes no sudden leaps, neither, it would appear, does technology".[13] And as a consequence, neither do technological products – this limits the designer to developing only what the current product could realistically evolve into. In reality it is a mechanism employed by corporations to: maintain lucrative generational economic models, extend the life of production lines, pander to conservative tastes through risk-avoidance, facilitate rapid object obsolescence, and encourage various forms of brand loyalty. There is nothing to suggest, however, that the decisions made many product generations ago were the ideal ones. Whilst natural organisms cannot be freed from their genealogical lineages, technological artefacts certainly can.

To fully understand the power of industrial design, it is necessary to understand its relation to the modern economy and the constraints that this imposes. The true purpose of industrial design is ultimately to sell more products. It uses all available methods to achieve this – global resources, cheap labour, complex manufacturing methods, the latest techniques – all disguised beneath the glossy façade of a well-designed surface. This formula has been perfected over the past century, and it is therefore a gargantuan challenge to provide viable alternatives.

towards appropriate means

By the 1960s and 70s, designers were realising the role they played in merely facilitating the growth of consumer capitalism – and some began to question and resist this role. In the words of Superstudio's *ADOLFO NATALINI:* "If design is merely an inducement to consume, then we must reject design".[14] Whilst Italy's Radical Designers chose a critical approach to mainstream design, others sought more constructive solutions.

ENZO MARI'S "Autoprogettazione" is particularly inspiring for the way he combined a rigorous critique of modern modes of production with a tangible but also "well-designed" practical proposition.[15] He asked: "How is it possible to change the state of things? … How is it possible to accomplish the deconditioning of form as a value rather than as strictly corresponding to content? The only way I know of … is what becomes possible when critical thought is based on practical work".

Enzo Mari, 1974: Adriano Alecchi (Mondadori Publishers), Public domain, via Wikimedia Commons

It is also encouraging to see, in recent years, the remarkable resurrection of *VICTOR PAPANEK'S* "Design for the Real World". Papanek's own words, in the preface to the second edition, offer some suggestions as to why his book gradually found broader acceptance.[16] Listing the problems experienced by the city of Detroit, including high unemployment and unusually cold winters, as well as a global energy shortage, he concludes that "maybe we learn best from disasters." Like Mari, Papanek devotes extensive thought not only to critique but also to "how it could be." More recent approaches such as the *MAKER MOVEMENT* also represent means through which we can deliver more appropriate ends though a technical expansion of more traditional approaches like DIY, and in turn, promote activities such as tinkering, hacking and repair, as well as the creation of new objects and devices.

Whilst all of the above present viable alternatives to mainstream design – and in the case of Mari, even approach the level of the superlative object – their impact on popular culture has been little felt, and they continue to exist mainly as hobbyist activities or niche cultural projects.

key challenges

Such alternative approaches address (in some way) the key issues described above. However, the application of more considered and appropriate *means* constrain the possibility of what can be made, both in terms of material and functional performance. This observation, to an extent, explains their limited impact – *UNETHICAL APPROACHES MAKE BETTER SUPERLATIVE OBJECTS.*

Based on this observation, the key challenges may be stated as follows:

First, the deskilling of generations of young people[17], as secondary and tertiary education focuses too exclusively on new ways of making such as 3D printing and laser cutting. This form of "Taylorisation" dramatically limits the scope of what can be made and by whom.[18]

Second, most consumers have grown too accustomed to superlative generational objects to accept the typical (low-design) DIY aesthetic. Therefore, unless (or until) consumer values shift, DIY cannot compete with the mass-produced objects of multinational corporations, which are artificially infused with an aura of magic.

Third, DIY by necessity places a focus on the local and available, thus narrowing the scope of what can be made under current (formidable) expectations of scale and performance.

And fourth, the complexity and inaccessibility of technical infrastructure limits what can be made and what can function independent of these systems.

As *MOROZOV* points out, paraphrasing *MARY DENNETT'S* early critique of Arts and Crafts, these shortcomings are best explained not as failures of aesthetics, but simply of economics.[19]

conclusion

Design creates desire. If, in the past, design has been used to encourage consumption and to make consumer goods more desirable, then, in the future, we must enlist design in the fight to bring our desires more closely in line with our needs. Moreover, as *ERIKSEN* points out, while it is difficult to identify a powerful single alternative to the neoliberal world order, smaller scale alternatives and pockets of resistance are many and varied; they tend to be "embedded, sprawling and diverse." [20] As Eriksen argues, "the complaints are universal and global, while the solutions are particular and local".

In theory, if not always in practice, DIY represents a perfect union: of bringing making to the average person, on one hand, while simultaneously preserving the aura of craft – and making visible the process or means that mass production destroys – on the other. The Marxist philosopher *WALTER BENJAMIN* recognised that capitalism would inevitably seek to exploit the possibilities of a mass medium like film, using it to pacify and manipulate rather than empower people. Similarly, many of the techniques of mechanical production could be used by everyone, but they are increasingly kept hidden and out of reach through deskilling, black boxing, and the manipulation of desires through advertising. Corporations manufacture artificial auras for their superlative objects, obscuring their origins and the human hands that make them. The question is, can we reshape this socially constructed nexus of values, shifting consumers away from supporting destructive practices and towards more engaged, visible, and ecological processes?

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future tense – the challenge of imagining alternative futures

michael smyth

"I'm surfing on a wave of nostalgia for an age yet to come." (Pete Shelley, 1978)[01]

So why is it so difficult to imagine futures? Not the futures set in galaxies far far away, but the ones connected to the present that lie tantalisingly just beyond the horizon. Futures still tethered to variants of today's infrastructure. This essay will consider the role of politics and technology and how they shape and influence the imagination of futures.

When people ask me about my research interests, my stock answer is that I am interested in the space between people and technology. While essentially true, this answer masks the complexity of that space and how it has grown to encompass so many aspects of our lived experience. Consider how the range and number of devices that we carry with us on a regular basis has increased, together with the amount of technology that is embedded in the physical environment, and how this has created an ever more complex design space. For example, as I sit on the bus going to work, which I tracked via an app from my flat prior to catching it, I am tapping these words into my phone. In my bag is a laptop, various cables and connectors and a pen and pencil but nothing to write on. Oh, and I am listening to music via headphones. What is interesting is that I am no different to the majority of my fellow passengers. I am just another urbanite, moving from place to place engaged in peripatetic working, consuming, or creating data or connecting with others.

Photo: Michael Smyth

There can be little doubt that, while technology has increased access to data, the amount of data available is growing exponentially and shows no signs of stopping. The combination of data growth and connectivity irrespective of location has created a complex and ever shifting technological landscape. Against the backdrop of constant change and the promise of technological solutions just beyond the horizon, the effect has been to make it difficult to imagine alternate futures. *MARK FISHER* described the situation when he wrote that "the future is now characterised as a series of technological upgrades." [02]

This piece will explore some of the reasons that might have contributed to this situation and will critically reflect on how designers can respond to the challenges of imagining futures. Why it is imperative that educators equip students with tools and methods that enable critical thinking, as it is the role of the young to challenge our assumptions and preconceptions about the role that products and services play in everyday life.

promised futures

In the early days of teaching Human Computer Interaction (HCI), I used to talk about the "digital world" as if somehow it was separated from, although connected to, the physical world. Today, that separation appears somewhat antiquated as technology has embedded itself into almost every aspect of our lived experience. Somehow hiding in plain sight and only being revealed with and through interactions.

Over time, technology has become synonymous with communication. Either communication with other humans or increasingly communication with artificial agents. At the touch of a few buttons on a device that we carry around with us seemingly all the time, we can talk to people across the globe. One way to consider technological artefacts is to think of them as nouns, the objects that manifest as products and services through which we interact directly. Whereas the consequences or effects of these actions can be considered as verbs. Verbs reflect needs or desires that remain relatively constant, while the nouns, or means through which these are achieved, change over time. For example, while it is challenging to predict the form and function that technologies might take fifty years in the future, it is safe to say that most of us will still enjoy the momentary connection of a stolen glance or a shared moment with a stranger in the street. As the desire for communication and connection with others is central to the lived experience, it should be no surprise that it has become synonymous with technology. Consequently, technology and the always connected promise that it offers has become integral to our imaginary futures. Imagining a post-technology future "shatters" rather than "stretches" what *JAMES AUGER* refers

to as "the plausibility that will in turn elicit a powerful level of audience reaction."[03]

While the technology corporations appear to have embedded their products and services into our collective imagined futures, the prevailing political landscape, whether that takes the form of neoliberalism or the shapeshifting world of post political populism, can be characterised by attempts to manage the present by promising visions of a near future. For example, how recent UK governments attempted to solve the problem of managing borders between the UK and the EU, while also not reintroducing boarding on the island of Ireland. The solution was to promise a future of "frictionless" borders that would rely on a technical solution that could somehow determine all the contents of traffic between the UK and the EU without the need for customs checks. While this was questioned in the media, it could also be thought of as a design fiction for political expediency that relies on an imagined future technology.[04]

ADAM CURTIS, in his film entitled "Hypernormalisation", suggests that as an economic and political philosophy, neoliberalism seemed to offer the possibility of "a world without politics."[05] In short, a much simpler world in which the free exercise of market forces would somehow resolve all political issues in the most democratic way possible, that is through the commercial choices of people. Thus, Curtis goes on to argue that neoliberal politicians in the West have stopped trying to change the world for the better: instead, they have set about trying to "manage" the world as a stable system without politics. Avoidance of risk has become engrained in politics resulting in it becoming more about managing the post-political world. Curtis suggests that since the 1970s, there has been a growing disconnect between this rhetoric and the lived experience of people, and this

credibility gap has led to what he refers to as "hypernormalisation." The situation where politicians and citizens have become resigned to maintaining the pretence of a functioning society. As a result, it has become more difficult to imagine alternative futures against a backdrop of constant promises of short-term benefits just beyond the horizon that ultimately rarely materialise.

The combined effect of technology and politics has been to offer promises about futures that have dampened down discontent with the present, and created a situation where there is an inability to imagine alternate futures. These ideas are echoed through the Croatian pavilion at the Biennale, as the work seeks to make us question how external factors such as climate change or the global pandemic can "colonise" the idea of futures and inhibit our ability to imagine alternatives that are possible, probable, or even desirable. Set against this backdrop of uncertainty and change, it should be no surprise that orientating towards the past for signals about our futures has become increasingly popular. The relationship between the past and the present and how that interaction influences design thinking when speculating about possible futures is undoubtedly complex.

lost futures

The nature of this relationship between the past and the future was articulated by the French philosopher *JACQUES DERRIDA* who coined the phrase "Hauntology".[06] What he meant by this term is that the present is haunted by the metaphorical "ghosts" of lost futures. The concept raises the question of how "spectres" of alternative futures influence current and historical discourse and if "haunting" has real effects on how we conceive

possible futures. In short, our visions of possible futures are always bound up with our concerns of the present which are, in turn, connected to the past through these "spectres."

More recently, critics such as Mark Fisher have discussed Hauntology in the context of describing contemporary culture's persistent re-cycling of retro aesthetics and what he considered to be an inability to escape old social forms.[07] His position is captured in his characterisation of 21st century culture as being "20th century culture distributed over high-speed networks".[08] For Fisher, creative and cultural production needs to either explicitly reference the techniques of the past in the means of production or risk being implicitly tethered to the past. In his 2012 paper entitled "What is Hauntology?", Fisher frames an argument that there is no leading edge of innovation anymore and that we are living in what *FRANCO "BIFFO" BERARDI* referred to as "after the future".[09] Fisher states that "what haunts the digital cul-de-sacs of the 21st century is not so much the past as all the lost futures that the 20th century taught us to anticipate".[10] From the perspective of speculative design, *ANTHONY DUNNE* has discussed the idea of "broken futures"[11] which I suspect refers to the promises of past futures and how these have failed to be delivered or, what was in fact delivered was a pale shadow of the original concept. In a similar way, James Auger refers to "alternate presents" or "lost futures" when considering different development paths, so rather that asking the question "what if?" it is reframed into asking "why are things the way they are?"[12]

This question explicitly acknowledges the relationship of the past to the present and provides a framing through which to criticise the present and suggest possible futures. While the past can offer nostalgia, it is only

when we accept the past that we can properly move forward. Speculative design, in many ways, is as much about understanding the past as it is about imagining futures.

technological futures

Technology has become integral to our lived experiences; it is the medium through which much of the world is experienced. It provides access to services that enable us to navigate the space, meet fellow inhabitants of these spaces and how we access the services and experiences that are contained within these spaces. But has technology made us too complacent, too content with the present, creating a situation where it is increasingly difficult to imagine alternative futures? This is despite the growth of media data sets and the diversity of tools available to search such repositories.

In the time that it takes to attempt to recall the name of a TV programme from our past, it is now possible to view original footage on a myriad of different platforms and services. These tools have the effect of making time plastic and stretchable, where the past has never been more accessible.

Fisher refers to this as "technologised" time, where the past and the future are subject to ceaseless de and re-composition.[13] Time becomes compressed and, in effect begins to disappear much in the same way as *MARC AUGÉ* talks about "non-place" when referring to airports, retail parks and chain stores as places that have become generic and have lost their meaning and connection to us.[14] Now we can add "non-time" into that discourse. The pattern of time was also a theme that was explored in the Croatian pavilion. For example, seasonal rather than technological patterns and how these might effect change

in production and consumption, but also what they might imply for the design tools that we have at our disposal.

There is now a new generation of artificial Generative Adversarial Networks (GANs). These employ neural network architectures to generate new data based on learned patterns. As well as generating images of human faces and creating images from text, GANs can generate entirely new data making them core to many leading-edge AI systems. Many of these systems are now integrated into the early phases of the design cycle where they are used to create a myriad of concepts based on existing datasets. Part of the appeal is the capability of seemingly endless recombination of images of the past based on the promise of insight through serendipity. In short, an automated cut up for a new generation.

So, what is the effect of the exponential growth of searchable and retrievable data; the growth of publicly available AI based tools that can manipulate and endlessly re-purpose such data into new forms and the allure of nostalgia? Slowly and imperceptibly, we have become beguiled by the increasing capacity to store, organise, access, and share vast amounts of cultural data. The laudable aim of data driven innovation needs to explicitly take on board the prophetic words of Berardi and Fisher and, what these mean for the design and development of technological tools, as these tools might have the unintended effect of dampening the very creativity that is central to the endeavour.

WILLIAM DERESIEWICZ recently wrote that AI operates by making high-probability choices: the most likely next word, in the case of written texts.[15] Creatives do not, they continue to operate in the world of low-probability choices. They make choices that are unexpected and that, Deresiewicz argues is what originality is, by definition: a low-probability choice, a choice that has never been

made. AIs cannot sense the world, see connections, and make idiosyncratic leaps, they don't experience sights or sounds, no joys or pains and ultimately no awareness. So rather than fearing the rise of AIs, educators must encourage students to develop curiosity, empathy and criticality. But most of all a desire to make things better, in short, the same as it ever was.

Acknowledgments

This work was funded by the AHRC Creative Industries Clusters Programme Award reference number: AH/S002782/1.

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a living planet: pale blue dot

mladen šolić

> *"We are living on this planet as if we had another one to go to."* (Terry Swearingen, environmental protection activist)

Our planet appears as a *pale blue dot* in the depths of space. That is the name of the photo that Voyager 1 took, at the suggestion of *CARL SAGAN,* at a distance of about 6 billion kilometres from the Sun, before finally turning off its cameras and flying into interstellar space. This iconic photo, in which Earth occupies only a single pixel, sent a message to humanity about Earth's vulnerability as a small and fragile dot in the cosmic ocean.

Looking at the pale blue dot, Carl Sagan wrote in 1994: "Look again at that dot. That's here. That's home. That's us. On it everyone you love, everyone you know, everyone you ever heard of, every human being who ever was, lived out their lives. The aggregate of our joy and suffering, thousands of confident religions, ideologies, and economic doctrines, every hunter and forager, every hero and coward, every creator and destroyer of civilization, every king and peasant, every young couple in love, every mother and father, hopeful child, inventor and explorer, every teacher of morals, every corrupt politician, every 'superstar', every 'supreme leader', every saint and sinner in the history of our species lived there – on a mote of dust suspended in a sunbeam. That's here. That's home. That's us."[01]

It is not without a certain irony that the warning about the fragility of our planet did not come from Earth, but from the depths of space through human technology, through the lens of a mechanical camera on board a spaceship.

freedom is the recognition of necessity

There are few people who would say they hate nature and want to destroy it. Most of us are sincerely convinced that we love the beauty of nature, enjoy being in it, find it relaxing, and that it brings us the peace we need. Yet our environment is constantly deteriorating, and environmental problems are becoming increasingly difficult to solve. Why is this so? How can we explain this paradox between most people's positive attitude toward nature and our collective impact, which is anything but positive for nature? It would seem that each of us is making a small contribution to the destruction of nature in our daily lives, usually completely unknowingly. This paradox has been called "the tragedy of the commons" by American ecologist *GARRETT HARDIN,* and the tragedy is that in the absence of any rules and regulations, everyone's interest is to satisfy their own needs, which ultimately harms everyone.[02] Citing *HEGEL'S* thought that *freedom is the recognition of necessity,* Hardin warns of the importance of recognising the commons (such as water, soil, atmospheric gases, stable climate) and the need to manage these goods in a way that brings cooperation and benefit to all.[03] In addition to our personal freedoms, people should also preserve and nurture these other, perhaps more valuable freedoms.

two ethics

Nature and human civilization are inextricably linked and intertwined. Ecology is not only a science that studies nature, but also a science of human society and its relations with nature. Social relations, political and economic systems on the one hand, and the natural world and man's relationship with nature on the other, have always reflected each other. The relationship between humans and nature has often been determined by social conditions, which have influenced ecological science and sought support for its ethical relationship with nature, while ecological science has sometimes imposed different views of nature on society and brought a new ethic, sometimes more, sometimes less successfully.

An ethical approach to nature views all living organisms and entire ecosystems as important and valuable in their own right. All living beings and their natural environment are interconnected and interdependent and should therefore be treated as a unique system. This approach assumes that all parts of ecosystems have value and that humans should act in ways that maintain the integrity and stability of ecosystems rather than destroy them for their own interests. *LEO TOLSTOY* expressed this as follows: "One of the first conditions for happiness is that the connection between man and nature is not broken". Even if our actions are not always firmly grounded in moral, aesthetic and emotional principles, man could find more convincing motives for a more careful treatment of nature in the fact that it benefits him, and such arguments are fortunately numerous. Organisms and ecosystems on Earth perform such important functions that touch the core of the possibility of life on Earth. To name just the most important: photosynthesis (primary production), nutrient cycling, water cycling, soil

formation and conservation, atmospheric gas conservation, regulation of the global climate, decomposition of the waste produced by our species in vast quantities, control of pests and pathogens that infect the plants and animals grown by humans. All these processes are the result of the activities of organisms on Earth. In addition, there is the role of organisms as a source of food, medicine, industrial resources, and enormous genetic diversity. We refer to all these processes that provide us with the necessary conditions for life as *ecosystem services,* and *GILBERT WHITE,* an 18th-century pastoral naturalist, called them the "grace of nature".[04] American ecologist *EUGENE ODUM* said: "We are able to breathe, drink, and eat in comfort because millions of organisms and hundreds of processes are operating to maintain a liveable environment, but we tend to take nature's services for granted because we don't pay money for most of them."[05] The decline of Earth's biodiversity calls these services into question, and without them, the survival of life on Earth would be seriously threatened. As *HENRY DAVID THOREAU* romantically put it: "What is the use of a fine house if you do not have a tolerable planet to put it on?"[06]

Photo: Ante Žuljević

In contrast to this ethic is the *imperial* utilitarian ethic, which promotes man's dominion over nature and utility as the basic principle of human action. Anything that benefits man is permissible and moral. This ethic finds its basis in the Christian religion as well as in all other monotheistic religions and their view of man as the ruler of nature. The utilitarian ethic became the dominant social ethic with the onset of the industrial revolution, which brought better living conditions and a higher standard of living to the population, but at the same time sowed the seeds of degradation and destruction of nature. Victorian thinkers believed that man's aggression toward nature was perfectly legitimate, even honourable, as long as that aggression was done in the name of humanity, decency, virtue, and even health and cleanliness. Humans should build a *paradise garden,* a civilized landscape which needs to be defended from *DARWIN'S* jungle. Nature is wild and endangers civilized society; to be civilized is to be separate and independent from nature. Darwin's theory of evolution supported his "imperial" contemporaries. If Darwin's world of aggression, struggle for survival, and survival of the fittest eventually leads to incredible evolutionary progress, then the same must be true for human economics. These thoughts have led to the rigid *social Darwinism* of *HERBERT SPENCER*.

JAMES LOVELOCK, the founder of the extreme holistic idea that the whole Earth is a living organism, which he called Gaia, said the following about the relationship between man and nature: "I think that we reject the evidence that our world is changing because we are still, as that wonderfully wise biologist E.O. Wilson reminded us, tribal carnivores. We are programmed by our inheritance to see other living things as mainly something to eat, and we care more about our national tribe than anything else.

We will even give our lives for it and are quite ready to kill other humans in the cruellest of ways for the good of our tribe. We still find alien the concept that we and the rest of life, from bacteria to whales, are parts of the much larger and diverse entity, the living Earth."[07]

These two ethics have clashed throughout history and are still present today. This Victorian view of the relationship between humans and nature is still strongly present. Competition, survival of the fittest, the philosophy that *might makes right,* and the imperial utilitarian ethic in relation to human nature (but also relations between people) are ideas that have been the driving force of the capitalist world and its ethics for more than two centuries, especially after the industrial revolution. The second ethic, the interdependence and interconnectedness of all living beings on Earth, the *holistic* approach in ecology, is now being upheld by *green* environmental movements and environmental activism.

numerous threats

However, our prevailing utilitarian attitude toward nature seriously threatens all of Earth's ecosystems. The effects of human civilization are numerous: destruction and degradation of habitats; various forms of pollution, from solid waste (today mainly plastic waste, which forms veritable islands of garbage in the world's oceans, the most famous being the Great Pacific Garbage Patch, discovered in 1997, whose area is growing rapidly and amounted to about 1.6 million square kilometres in 2019) to various toxic substances such as pesticides and oil spills. In addition, overfishing and the introduction of non-native species are an ever-increasing problem. Finally, global warming is increasing air

and ocean temperatures, increasing the frequency of weather extremes such as droughts, floods, heat waves, and severe hurricanes, contributing to ocean acidification, and raising ocean salinity. Environmental activist *ALAN M. EDDISON* succinctly stated his opinion on the impact of technology on the environment: "Modern technology owes ecology an apology."

biodiversity — 'nature's insurance policy'

All these negative effects lead to the extinction of species and changes in the structure of biotic communities. The reduction of biodiversity significantly affects the stability of ecosystems and calls their functioning into question. Biodiversity provides a functional stock of species, a kind of "reserve bench" for potential disturbances. On the other hand, greater species diversity increases the proportion of weak interactions in the community that dampen the destabilizing potential of strong interactions. Finally, greater diversity increases the range of responses of individual species to perturbations, reducing the likelihood of catastrophic consequences. All of these mechanisms, present in diverse communities, increase the resilience of ecosystems to disturbance, making them more stable and ensuring the fulfilment of their functions, which are essential for sustaining life on Earth, including our species. Biodiversity is a kind of *insurance policy* for the functioning of Earth's ecosystems.

This decline in natural diversity is also reflected in our globalized civilization. One of the most brilliant physicists in the field of elementary particles, Nobel laureate *MURRAY GELL-MANN,* has warned that "both biological and cultural diversity are now seriously threatened, and

working to preserve them is a critically important task". Indeed, our entire human civilization has become uniform; we all eat the same food, watch the same movies, and wear the same clothes. If we are to accept the lesson that nature can teach us, it is that *globalization makes our civilization vulnerable, unstable and non-resistant to disturbances of any kind*.

Photo: Ante Žuljević

cooperation as a new paradigm

Ecologists have long seen competition as the dominant evolutionary force and relationship governing nature, from Darwin's time to the present. They have observed the struggle for survival, conflict, extinction, and survival of the fittest; they have seen nature described by the Victorian poet *ALFRED TENNYSON* as one with "bloody teeth and claws". Over time, however, ecologists have begun to observe cooperation, mutualism, and interdependence everywhere in their studies of nature. Today we know that the number of interdependent and cooperative interactions in nature far outnumbers those characterised by

competition and conflict. We find cooperation in every corner of nature. Without insect and plant cooperation, most plants on Earth could not exist because there would be no one to pollinate them or disperse their seeds. Without cooperation, the largest biological structures on Earth, the coral reefs, would not exist because thousands of species work together to build them. Each coral polyp contains about one million unicellular algae in its tissue in one square centimetre. Corals and algae are partners and cannot live without each other. The phenomenon of coral "bleaching", due to global warming, pollution, and/or acidification, occurs when these mutualistic algae die, the coral turns white because these algae gave it the colour, and then dies itself because the food produced by the algae is missing. Millions of microorganisms live in our body as our partners. The number of cells of these microorganisms is approximately equal to the number of our human cells. These microorganisms ensure the health and proper functioning of numerous systems in our body. Recent medical research suggests that the origin of many diseases lies in a dysfunctional relationship between our body and our microbial partners.

Ecologists have found that nature strives for more cooperation and less competition. Even Darwin knew that evolution is a process of increasing ecological complexity in nature. On the one hand, species "work" on their diversity to avoid competition, and the environment itself becomes more complex, creating new "places" *(ecological niches)* for new species to occupy. In the Galapágos Islands, when two species of finches live on different islands, they have approximately the same beak size. However, when they live together on the same island, one species has smaller bills and the other has larger bills and feeds on different foods. This phenomenon, called a *character displacement* by ecologists, shows

an evolutionary process of increasing differentiation between species to avoid competition for the same food.

If Victorian society and today's capitalist society imitated nature, where competition and the struggle for survival dominate, can we change our perspective today and imitate nature's cooperation? If, as quantum physicists say, the observer influences the observed, can the observed also affect the observer? Can the cooperation we observe in nature be our guide for the future? Ecologist *WARDER CLYDE ALLEE* says: "Widespread knowledge of the important role of cooperation and assistance processes among living beings can lead to the acceptance of cooperation as a leading principle in social theory and as a foundation for human behaviour. Such a development, when it occurs, will change the course of human history."[08]

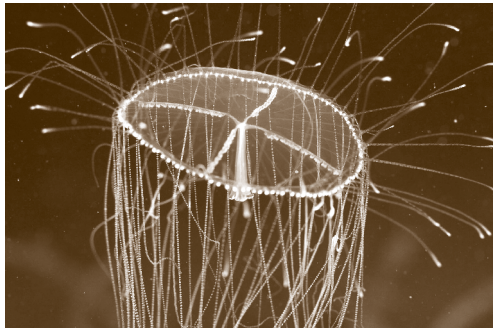

Photo: Ante Žuljević

nature's response

How does nature cope with the effects of human civilization? Many ecologists and environmentalists have expressed in various ways that *man cannot live without "Mother Earth", but the planet can live without man.* Nature is certainly more resilient than any single species, including humans. James Lovelock has astutely observed this: "Nature favours those organisms which leave the environment in better shape for their progeny to survive".[09] According to Lovelock, the human species does not appear to be nature's first choice. Lovelock sometimes expressed himself more forcefully, saying, for example, that "humans on Earth behave in some ways like a pathogenic microorganism or like the cells of a tumour". Planet Earth does not exist because of man, but man is its product, and our longevity will depend in large measure on our relationship to each other. In response to the effects of civilization, nature is reorganising itself, changing the composition and distribution of species on Earth and the functioning of ecosystems, and establishing new equilibrium relationships. In the process, nature does not care about humans; it does not notice us. Humans can be victims of changes in nature, and it is especially paradoxical when we ourselves have caused these changes. For example, global warming can lead to the disappearance of many species of fish, with jellyfish replacing the small pelagic fish that cope better with warming, and fish reducing their size because one response of organisms to global warming is a reduction in body size. In addition, global warming may trigger geographic shifts in plants and insects, as well as shifts in the timing of plant flowering and insect reproduction, but in a mismatched way, so that the occurrence of flowers and insects does not coincide in space or time. We have said that biodiversity

increases the stability of ecosystems and maintains their functions. We do not know exactly how many species will have to disappear for ecosystems to stop functioning, when *the grace of nature* will cease and when we will no longer have services without which we cannot survive. Our ecosystems are like airplanes whose wings are attached to the fuselage with rivets. We do not know how many rivets have to fall off before the wing falls off, but we do know that with each rivet lost, our plane becomes more vulnerable and closer to disaster.

developing wisdom of life

Can nature and ecological science give us advice for the future? Nature can certainly offer us numerous models useful for human society. Above all, nature operates on the principle of interdependence. In fact, it can only function in this way. No organism or species has much chance of survival without the help of others. *JOHN MUIR*, an American naturalist of the 19th and early 20th century, once said: "When we try to pick out anything by itself, we find it connected to everything else in the universe". *RACHEL CARSON* expressed this by saying: "In nature, nothing exists alone."[10] If you send a single organism or a population of organisms into the universe alone, without the services of other species of organisms, from soil fertility to oxygen production, it will not survive. Evolutionary companions are needed.

Nature is built primarily on interdependence and cooperation, much less on conflict and competition. For some time, many people have lost sight of this truth and sometimes even believe that they can live solely on the basis of their technological progress. *BARBARA WARD*, a British economist and environmental activist, criticized

this view of progress by saying: "We have forgotten how to be good guests, how to walk lightly on the earth as its other creatures do".[11]

But the last decades have completely destroyed this illusion. The fact of our interdependence with other living beings, the interconnectedness of all life on the planet, has become more apparent than ever before. Nature can provide us with numerous models of successful adaptations from which we can learn today. If we want to fly, for example, we can find models in the wings of birds that took tens of millions of years to perfect. If we want to stop soil erosion or survive a drought, we have a proven model in vegetation, which conserves soil and water in the ground much better than, for example, wheat monocultures, and which, unlike domestic crops, can recover more successfully from severe droughts. We may not think of such models as lessons from history, but they are all products of past experience, and an ecologist who thinks historically discovers how they arose through the process of evolution, which we can call the *evolving wisdom of life*. In light of this way of thinking, environmental protection becomes an effort to protect certain rates of change in the biological world from incompatible changes in our economy and technology. This way of thinking should occupy a high place in our value system. It requires some effort and even giving up certain comforts we have taken for granted. As *GAYLORD NELSON*, an American politician and environmental activist, said, "the ultimate test of a man's conscience may be his willingness to sacrifice something today for future generations whose words of thanks will not be heard".

can we change anything?

"Man shapes himself through decisions that shape his environment". (Rene Dubos, French-American microbiologist and ecological activist)[12]

This is a very difficult question. It is clear that we cannot simply turn all of our wheat fields or other crops, no matter how ecologically misguided they may be, into the grassy vegetation of meadows, steppes, savannas, pampas, or prairies, nor can we turn industrial capitalism into a medieval Alpine village or a Bushman hunter-gatherer society. We simply cannot turn back time and undo all that has happened. In that sense, we are prisoners of time. But we can approach the records of the past with much more respect, acknowledging that most of the innovations we have recently made are unlikely to survive, that what has happened in the past deserves respect and can serve as a guide to new forms of behaviour; that what is very old and belongs to the past can actually be wise.

We probably cannot find societies that are perfect in every respect, either in the past or in the present, but we can find models to study and learn from. They are everywhere, these communities that were able to adapt to life in their environment over impressive periods of time, that were less aggressive toward nature, that cooperated more with nature and with each other, that were more successful in dealing with the common good, and that might have gained some important insights about nature that we are missing. Perhaps these communities could not escape the ravages of time (hardly anyone can), but they were more successful than we are in resisting the inevitable passage of time. The American scientist ***ELINOR OSTROM,*** Nobel laureate in economics, has devoted

her career to the study of human communities that were successful examples of managing the common good and avoiding *the tragedy of the commons.*[13]

Is there a secret hidden in these communities that we need to uncover? It seems that these communities had a common feature. They created numerous rules, sometimes carefully planned and calculated, sometimes rooted in tradition, but always based on familiar local experiences to regulate their behaviour. Crucially, Ostrom argues, everyone participated in making the rules and everyone had the ability to monitor compliance with them. In these successful communities, people did not try to live in isolation from nature or from each other, nor did they resist restrictions on individual rights. On the contrary, they accepted many kinds of restrictions on themselves and imposed them on each other. Their methods of enforcing rules may not meet the standards of our modern "democratic," "free," and "rightful" society, or they may not conform to our contemporary standards of personal rights and security, and they certainly may suppress creativity or originality to some extent. But history is clear on this point: having these rules and enforcing them consistently and persistently seems to be an essential recipe for long-term ecological survival.

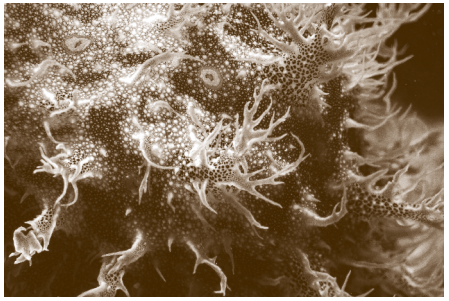

Photo: Ante Žuljević

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reconsidering the body and/in the landscape

lígia oliveira

re-placing the body/ the place of the body

Beyond the mainstream Western way of considering landscapes as the scenario through which the body moves and exists, there are other possibilities. I propose to look at those afar from an extractive, controlling point of view, and reframed through a relational discourse. The starting point of this aim is the view that, albeit with potentially good intentions, the overall drive of the architecture, design and art practices within the recent Western tradition have been of mind over matter. What has been targeted, in this process and goal, is to control what is around – the environment, others, and the body –, through the means of power. Whilst the nature of each intervention, building, design, at its core, can be seen as inevitably relational – in relation to its context, be it land (and streets), elements (buildings, materials), beings and entities (citizens, audiences, users, more than humans) –, the common standard has largely been defined by imposition, exploitation and separation; quite ignoring the emotional, relational component of our existence. There is sometimes a little friendliness in it, yet, considering the overall results on a planetary scale, this clearly has been not enough.

A hallmark rooted in misconceptions, such as framing these disciplines outside of a consciously engaged emotional discourse, ingrained in its ways of doing. This is not exclusive to these domains, as overall, the Cartesian conceptualisation of separation between body and mind prevails across disciplines. In the West, the brain is considered to be where the mind, and consciousness, resides; and thinking, in itself, is predominantly seen as superior (again, power and control) to feeling. These notions are being challenged in neuroscience, namely by

DAMÁSIO, who proposed a different take: "I feel, therefore I am."[01] The same author considers that the field of affection, sentiments and emotions is understudied in how they motivate human cultural activity, being the unidentified presence on cultural discussion; and that feelings and emotions mobilise the intellect, a process in which also intervenes creativity, our memory, philosophical enquiry and political concerns.[02] I will go into that later. First, let us return to a subtle, pertinent issue in how we approach the nature of our work, within this power domain: separation and threat, largely an effect of reactivity. The rhythm of our jobs, as professional practices or within academia, has become largely dependent on speed, in what we hypothesise as efficiency, however correlated to an overwhelming response to feelings of urgency, anxiety and distress as it is. That is how our society works, after all; and we do so because we believe "it has to be that way." Both conceptualisations, of mind over matter, and of innate urgency, define processes and outcomes; and both need to be addressed, within the current context of the multiple crisis we are having to deal with: climate change, biodiversity loss, mass displacements, overall anxieties (including eco-anxiety), and overwhelming grief. Consequently, it is important to reflect on what stance we want to proceed, and with what attitude, towards a coherent sense of processes and outcomes.

Apart from narratives of exploitation and distress, there are more that we can learn from. Narratives of stillness, of non-linearity; wisdoms that have observed cycles and changes throughout time, rooted in the land and that maintain a relational way of being with the Earth – close enough to notice when that relationship was starting to be imbalanced. Indigenous peoples' knowledge inform us this is not the first moment we have lost that harmony,

and of the ways of colonialism that led us to this scale of disfunction. I find that point particularly relevant, as it puts the emphasis on a set of behaviours, not on the species. After all, if the current climate change is driven by human activity, it is also the human activity of Indigenous peoples – who represent 5% of the world population – that protect 80% of the global biodiversity. It is not humans versus nature, but decisions that can be acknowledged and corrected. We can listen to their knowledge, in ways that are respectful and attentive to key processes; to observe and reflect on our own historical background, to when, in our own lands, there was harmony and recognition of the interconnection between humans and nature – even if for Europeans, that means going back to the Palaeolithic; to observe the processes and ways of being of other species. And finally, to critically look within: possibilities are diverse, and may run in common themes, ways of doing and being. Likewise, we gain from having an open view to work done across academia that has outgrown traditional silos of knowledge. Cooperation and community-based, inclusive practices, interdisciplinary approaches, curiosity and openness are fundamental ways of doing; yet indispensable are also the ethics of environmental justice that acknowledges the right of/to land and self-determination of communities and Indigenous peoples, gender justice, stopping violence, and last yet far from least, understanding, and healing, intergenerational trauma. Its delay perpetuates the cycles of exploitation, production and consumption that give rise to the same crisis we aim to approach, adapt to and mitigate. These issues are relevant in the ways they relate to the climate crisis, and essential for a perspective that does not romanticise nature – not as separated from ourselves –, and is not exceedingly focused on solutions, such as those provided by technology. Even

though these play a role, they are not the essence of the systemic change we need for our future.

The core shift occurs with the reintegration of this relational meaning, in aim and processes, by both a radical turn and an integral continuum, re-establishing the idea of care. If a significant part, if not most, of the climate challenge we are facing depends on us to change our relationship with Earth, beyond abstract conceptualisations that limit the issue to an environmental crisis, this really means how we relate to each other, both humans and more than humans; to the land, and significantly, to its materiality and to the sacredness in it. To the issue, and its complexity, at hand; to change from a power stance into a companionship; as *WHYTE* refers, to a kinship with Earth[03]. If the overdrive of colonialism and capitalism are a reactive posture on unresolved issues, these can equally be acknowledged and addressed by changing priorities, beliefs, and behaviours.

Study of water #2. Photo: Lígia Oliveira

practices of connection: embodied practices of kinship

The base of a relational approach is the body, thus it is imperative to reconsider notions of "human scale" beyond quantitative measurements and into a deeper consideration of feelings and emotions, integrated into robust belief systems. Being the body the place where these are felt, the landscape is the seat of emotion and sensation. Not all is misunderstood: the word "emotion" comes from the Latin *movere,* to move. Between the slow movement of changing phenomena, of land and its elements and beings, us, too, included, there are natural rhythms that arise. These have been observed for thousands of years, since the time we had no question to be part of nature. Emotion, eventually, through the sense of the body, allows us to be in touch with ourselves and our surroundings; to be aware. And through that same body, through the same touch, to be in relationship with our surroundings. All of which is easily recovered, albeit lightly due to ingrained habits, when people find themselves in pleasant, calm places and relax: they begin to breathe, sense, smell, feel, touch, to embrace; to recover a sense of being beyond the doing, away from the sinful, limited body view imposed by centuries of dogma. Sensation, on the other hand, roots in *sentire;* to perceive, and to know. We know ourselves through our sensations – the bodily senses, from which we perceive the world around us; and through these sensations, we also comprehend our inner emotional landscapes. *SENNETT* has written on the sensory deprivation of cities in Western civilisation, throughout the centuries; on the interaction between body and built environment.[04] Contemporary Western

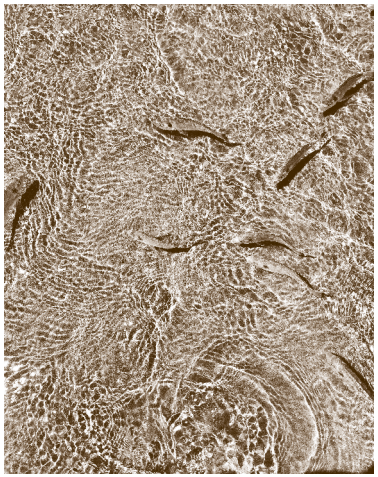
cities are filled with a very particular emotional appeal, the one of aggressive consumerism that constantly says: "you're not enough and you need this, now". Natural landscapes are where the connection to land remains clearer, contrary to "cityscapes" – an erroneous definition that configures construction as if it occurred outside of the land, but it does not. Natural places can also be where the differentiation and separation imposed by consumerism are more easily relieved by contentment. Thus, a significant part of our work is to re-place the body in landscape, and that means: understanding that beyond rural and urban, there is land; finding ways of relating to land, through the body – its senses, and particularly, its emotional inner landscapes and sensory flows, by which we perceive, understand and adapt. And finding our way into community, so shared meanings, experiences, and our own place in the world can be reconfigured into an expanded sense of self, of relatedness and interconnection. To both processes and outcomes, culture – the overall architectural, design and artistic disciplines, play a key role.

Culture and innovation are crucial for social transformation. Culture mediates the relationship between land and body in obvious ways, through use of local materials for architecture and objects, in the process by which a dialogue between humans and territory occurs, like other species do, as well. Culture is also essential for democracy, in the expression of values, identities, ways of living, traditions, knowledge, and history. Disciplines within the creative fields make the objects people use and the places where people live, socialise, work and play. Our disciplines conduct imagination and change; we are skilled at understanding and interpreting collective beliefs, and in being of service to those. The history of architecture, design and the arts is made of these individual and

collective intentions and movements; and the way history is written in itself is a constant reconsideration of values. The symbolic dimension is particularly powerful in the way meanings are indirectly conveyed. Through suggestion and metaphor, they may relate to people in ways that transcend their immediate form, materials, visuals and can establish a connection to the sacred – understood here as a non-religious concept, that relates to feeling elevation, integration and awe, and largely inhabits the tangible of everyday life: what arises through the senses, related to places, people, more than humans; to ritual activities (repetitive acts towards meaning and bond), and to some interconnection aspect, that may be part of belonging, myth and experiences and extends knowledge, reconfiguring the previous understanding of the self. We have a keen eye for knowing the rhythms of nature, its patterns and geometry, melodies and silences, and to transmit those in a language of beauty.

Inevitably, our work mediates our bodies with others and landscapes: this relationship exists even when architecture aims to solely serve a practical need (protection from weather, for example), conforming communities within a specific territory; its overall processes and outcomes reveal relational intentions, within the symbolic. These might be of status, harmony, inclusion. But in these examples, housing is not only shelter from the elements, complying with social hierarchy within the community in its choices, but sets a specific form of boundary with nature, too; and how that boundary is established – the design choices, processes, overall end – matters greatly. This dialogue with nature, whether we acknowledge it or not, is deeply present within our practices. Perhaps the first human cultural manifestations had this same relational intention, with a clear kinship aim: to bond with life – other species, the elements themselves.

To honour, celebrate, and to make clear our interconnection and interdependence with the ecosystem; the mundane mystery of existence. Architecture, design, art, are embedded with a practical and a relational need – within our species, with more than humans, the elements, etcetera; cultural disciplines are how the language of care and connection is affirmed.



The movement of fish.
Photo: Lígia Oliveira

With the ways by which the mundane is integrated with the sacred, the material with the symbolic, our disciplines can contribute to accelerate the indispensable behavioural changes, by fostering the connection between people and nature. This can be achieved through process and outcome; across the project phase, and as an end in itself. In a way, these are the same. By direct experiential practices and through the inquiry into other's ways of doing, it is relevant to highlight the processes

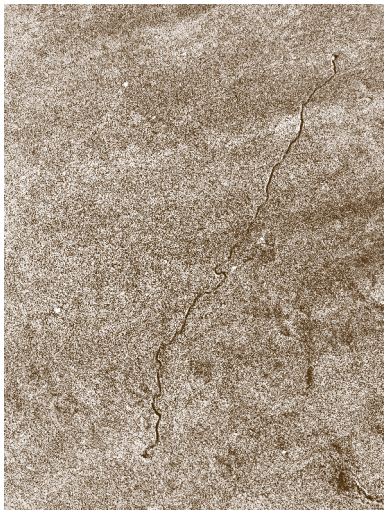
beyond the final form and overall aesthetics. The relevance of this knowledge lays significantly within a context of investigation and unfolding: through phenomenological practices of observation, and by incorporating research as the goal, expanding and reconsidering the notion of the finished project into ongoing, collaborative and adaptive practices. By re-examining the body as the locus of awareness – emotion, beliefs, senses – and its relationship to the landscape – Earth, land, aliveness, place of belonging; where culture, be it a building, object, either way, a narrative, is how this bond is established. This relational quality, process and/or outcome can be direct or can use a metaphor – a leap beyond the rational that connects and transforms preconceived meanings. Individually, in processes and outcomes, practices that are grounded in the direct experience of places and the self, through a phenomenological approach that is sensuous, but also, indicative of the emotions we perceive in relation to places, streets, buildings, interiors, gardens, objects, provide relevant information on our values, biographies and cultural norms. An expanded notion of land, body, and how they relate that teaches to do less: to be precise, and intentional.

stillness: listening, reflecting, researching (instead of performing)

Of the many guidelines possible, one summarises it with aim: the uses of time, how it includes different measures of deadlines and climate change, embracing the present, the future and the past, and moving through those with flexibility and awareness. The projects of the future will also become past; how do we want those to degrade, transform? Beyond their materiality, what do they bring? Land speaks of these changes; the smallest rock holds a different time from our clocks, a geological time. How would it be to consider projects with a 500-year time frame, and to design looking back from there? While wondering, does the project address the issues of now, the future, and how does it relate to the past – and to what historical past, exactly? Does it stress a lineage of power and control, or does it reconfigure a way of being into care? All of this contains how we manage our own time – the time for our work, the speed at which we labour. Cultivating relational practices with the body and the landscape, inserted in an expanded view of time, coherently links values and outcomes. Understanding if and how we are aligned with those depends on a daily practice of paying attention; a phenomenological-based approach to living, and to its inputs, namely, to a sense of interconnection – an expanded view of more than humans, and explorations on how to relate to them, and analytically and reflexively work with that data.

It is relevant to ask, in our practices, what do they reveal about our culture? What are the beliefs they transmit, and how are these being carried out by the projects. And how did we lose these relational values as a

structural approach to nature; and eventually, to each other? How are those embedded in our current relationships? Several disruptors can impact individual and collective behaviours: the inevitable traumatic nature of life, caused by nature and conduct; the lack of a culture of mending, individually and collectively, that contributes to recovery and prevents those impacts. Practices of care, by which formal laws, such as Rights of Nature, and culture: the narratives and storytelling of social construct, aiming to reshape structural issues of power and to highlight relational values, to land and beings.



Invertebrate movement.
Photo: Lígia Oliveira

If we are to recover our bond to nature, as a whole, we might reflect on how is a good relationship defined? Among others, guiding values might be: trust, respect, reciprocity, acceptance, and care. It may feel uncomfortable to consider these values when looking at a river, a rock, a fish or a tree; trust over land may feel overly opposite to the driving forces of consumerism, and respect towards a river may ask for more integrity in how we approach our work. Questions may include asking others – people, plants, mountains, seas. What do they need? The willingness towards curiosity and empathy matters: to question and to think critically. Questioning what would nature do – how would nature design? (explored by others, including *BIANCIARDI* et al.[05]) not only as a final outcome, but as a process in itself.[06]

Returning to the etymology of words: courage is related to the Latin *cor,* "heart": as the symbol of emotions, it holds vital attributes in reframing the Western conceptualisation of the mind's absolute power. Courage, after all, is also embodied: it holds reason, decision, values, care and even posture. Matter, from the Latin *materia,* is rooted in the substance from which things are made: the inner wood of a tree, and source, origin, mother. Converging mind with body, care with matter, while acknowledging our interconnection to land, as material and mother, process and outcome is fundamental in our times. Culture is the relational language by which this bond is nurtured: through regenerative relational practices that go beyond materiality and renew our commitment to nature. This addresses climate change, our relation to the environment, others and ourselves; it re-members who we are, recovers lost parts of our substance and in that process, our relationship to nature. Through practices such as phenomenology, we reconsider identity and the "other": an expanded view of more

than humans, an inquiry on how to relate to them. We observe, through the senses, our local context (listening); the knowledge of the global, what has been done, historically, to address local and global (reflect and research). These practices are slow, process-oriented, open and go beyond problem-solving: intentionally moving past the (performative) expectations of what our disciplines can be.

Salt pan, a traditional dialogue
between humans and land.
Photo: Lígia Oliveira

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the 'future of architecture' is for other species

harriet harriss

Same as it ever was.
Same as it ever was?
And you may find yourself living in a ~~shotgun shack~~ CLIMATE MIGRANT REFUGEE CAMP
And you may find yourself in ~~another~~ UNINHABITABLE part of the world
And you may find yourself NO LONGER behind the ~~wheel~~ IDEA of AN ELECTRIC ~~large~~ automobile
And you may find yourself in a beautiful house, with a beautiful (SELF-IDENTIFYING) wife POISONED BY THE MATERIALS OFF-GASSING IN YOUR BEAUTIFUL HOUSE, BUILT TO YOUR OWN SPECIFICATIONS
And you may ask yourself – AND NOT BLAME YOUR ARCHITECTURE SCHOOL, YOUR PROFESSION OR YOUR GOVERNMENT – "Well, how did I get here?"

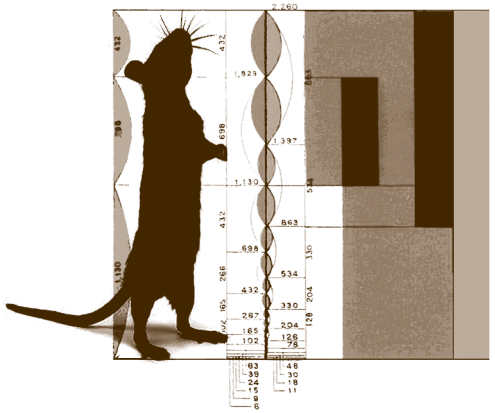
An adaptation of "Once in a Lifetime",
Talking Heads (1980).

rodent pedagogies

LESLEY LOKKO'S 2023 Venice Biennale theme, the "laboratory of the future" invites a contention with two flawed assumptions. Firstly, that human beings – having initiated global ecological collapse – have any "future" at all. And secondly, that proposing a 6-month long "laboratory" – the duration of the Biennale – could result in outcomes capable of mitigating what 300,000 years of human life earth has experimentally created – a climate emergency. Whatever the prefix – laboratory, think tank, policy, product or pedagogy – a future architecture is only possible if there is a future *planet.* Architecture for humans may have been doggedly monospecies-privileging thus far, however, its existence entirely depends upon the co-existence of millions of other species – and, their architectures, too. And, since humans have rendered less than 2-3% of the world's ecosystems intact,[01] human-made, enduring architectures will need to prioritise restoring, rehabilitating or reinforcing the architectures of the few species deemed likely to survive climate collapse, given humans are not anticipated to be among them[02]. There will still be human-centred architectures needed in the meanwhile. But so far, the anthropogenic approach to the design, build and execution of the current ecological precipice throughout history could be pithily described as the architecture to end all architectures.

Utopian laconisms such as the "laboratory of the future" prove seductive because of their ability obfuscate anthropogenic egocentrism and provide a panacea to the reality of climate grief, loss and terror. One could also argue that a *laboratory environment* describes precisely how humans have behaved towards the earth and its inhabitants thus far, rather than what humans should aspire to, especially in light of the fact that all social and

ecological experiments to date have evidently failed, and the die-rates are approaching 100%. Even if humans collectively enacted an immediate ceasefire of all anthropocene activity – which would by implication include acts of architectural "creation" – it might slow things down, but science affirms that a unilateral, all-systems "collapse" is closer to an inevitability than a possibility. And, since not one of 8 billion (and counting) humans have so far offered an even faintly plausible "solution" to the self-made, selfishly-made climate "problem", learning from other less-destructive, more adaptive species for survival intelligence seems like a reasonable approach. Unlike humans, rats are anticipated to survive climate collapse. And, while a self-anointed "apex species" may display signs of egotistical resistance towards the idea of learning from species they dismiss as "vermin", it's worth remembering that humans share a common ancestor and 69% of their DNA with rodents. In contrast, the "average human" (mindful of the often unspoken bias caused by Western over-consumption) will generate 90,000 pounds (45 tons) of waste over the course of a lifetime[03], rats feed off of waste, effectively wasting nothing. Moreover, when laboratory rats are released into the wild, even those born in captivity, they soon rediscover their wild nature. It is time that humans, having architectured the ecological conditions that require an end to the *laboratory environment, could* rediscover their wild waste-neutral nature, too. Beyond the experiments in monetary, military, institutional, epistemological, professional, ideological, discriminatory, exploitative and deadly infrastructures – exists a "wild" world of better architectural ideals and actions, indeed.



Modulor Rat

necrocapitalism's impeccable economic logic

While all anthropos are born equal, it is a statistical fact that the majority of the people who already have been or will be disproportionately affected by climate collapse are black and brown. It is not always a matter of where they are situated in the world, economically or geographically. If they live in the northern hemisphere, structural racism means their housing is less likely to protect them from overheating than that of the white population. If they are situated within the Global South, colonial and postcolonial policies ensure that the least polluting countries absorb waste from the most polluting countries. In 1991, *LAWRENCE SUMMERS,* the then vice president and chief economist of the World Bank, described "the dumping of a load of toxic waste" produced within the USA, "on the poorest country" as "impeccable economic logic".[04] This became "The Lawrence Summers' Principle" – a term coined by Martinez-Alier (1994) and has since been summarised by what economists call "formula" as, "the poor sell cheap". The leaked memo goes on to question why the World Bank, "shouldn't be… encouraging more migration of the dirty industries to the LDCs [Least Developed Countries]? […] A given amount of health impairing pollution should be done in the country with the lowest cost, which will be the country with the lowest wages."[05] Such examples of environmental racism make explicit the interoperability of climate injustice and social injustice. They also account for why any architect serious in their intention to address one injustice cannot do so without addressing the other.

Climate collapse is a direct consequence of necro-capitalism's[06] ability to create a constant sense of everyday crisis through its wealth-polarising conflicts, the fostering of social inequities and boom-and-bust economics. The world's billionaires – necrocapitalism's architects – are responsible for a million times more greenhouse gas emissions than the "average" person[07] and who have plans in place to ensure they are the least affected. In a world where the only "currencies" worth anything will be food and water and not bitcoin[08], no amount of retrofitting old nuclear bunkers, interplanetary colonisations, or electrocution of security guards via cervical dog collars will sustain them for too long. But in the meantime, the baddy billionaires still need – and succeed – in appointing architects willing to exercise their own interpretation of the same "impeccable economic logic" – even if it destroys the planet, and with it their profession, too.

Impeccable economic logic

‘teaming’ with life

Planet earth has witnessed five mass extinctions prior to now, but none were triggered by human activity – perhaps only due to the fact that humans had yet to exist. The Ordovician extinction took place 444 million years ago and lost 86% of all species. The Late Devonian occurred 375 million years ago during which 75% of species were lost. The third was the End Permian that took place 251 million years ago and lost 96% of species. And, the fourth was the End Triassic some 200 million years ago during which 80% of the earth’s species vanished. The final (so far) and the fifth was the End Cretaceous 66 million years ago in which 76% of all species became extinct. Consequently, science suggests that anticipating a median all-species mass extinction rate of at least 75% seems likely, even without factoring in the

efforts of one species to accelerate the prerequisite temperature increase. While science cannot precisely predetermine which species will be among the estimated 25% likely to survive the 6th mass extinction, there is broad consensus that post-collapse survival rates may be tied to two main factors; size and the ability to collaborate with other species. Large mammals (similar or greater in scale than humans) have poor odds. However, many large mammals are excellent interspecies collaborators[09], unlike humans, who can’t enact same species’ collaboration effectively. If any humans (besides billionaires) *do* survive, it will only be the most cooperative. Architects’ renowned struggle with teamwork[10] suggests they might not be many among them.

filicide follows function

While many architects insist that architecture is at the forefront of efforts to tackle climate collapse, the reality is that architecture’s long-standing, torrid affair with cool-skinned, naked concrete[11] – trussed up in a BDSM corset of heavily manufactured textures and technologies – continues to spawn ethically-illegitimate, energy-guzzling offspring, that infinitely demand wet-nursing through maintenance costs and repair demands. Most of the buildings’ architecture awards its prizes to are built to specifications that read like climate-crime prosecution statements.[12] Despite the plethora of personal, professional and planetary imperatives, climate crisis neologisms and new scientific terminologies needed to understand and respond to the pan-sectoral implications of the unfolding, ecological end-game remain absent from architecture’s accreditation criteria. As a consequence, curricula continue to lack the mandate to

prioritise climate crisis-essential content and remain condemned to candy-coat credibility over the cracks in architecture's increasingly irrelevant terms and traditions. The result is an (often expensive) degree certificate that risks being (functionally) dead-on-arrival. Moreover, the long hours culture, the ongoing issues with discrimination, the persistence of unpaid internships (akin to eating the young) and the collective willingness to prioritise material aesthetics over moral integrity makes architecture a self-annihilating profession within a self-annihilating species.

dome go breaking my heart

While the myth of the lone starchitect is often still considered an ideal, it is climate collapse that has proven itself the more expedient, neologically-expert and portfolio-prolific starchitect of all – merrily melting 750 billion tonnes of polar ice caps annually[13] albeit directly facilitated by humans pouring 30 billion tons of concrete each year, too[14]. In doing so, whether it is intended as karma or irony, climate collapse is working to ensure that the entire profession becomes ultimate unpaid intern, forced to work overtime detailing the marginal minutiae of an all-systems collapse architecture prescribed by a destruction framework agreement. This might seem like a bad joke. However, a worse joke concerns the fact that the world's 3-4 million architects have only managed to build less than 2,500 zero carbon buildings accounting for less than 0.1% of the world's total,[15,16] and yet continue to wrongly claim that architects are "playing an important role" in actively addressing climate change[17]. Another example of what makes climate collapse the

more prolific "starchitect" is its ability to colonise spatial typologies, such as the 2021 Pacific northwest "heat dome" that killed hundreds of people and roasted over a billion sea creatures in their shells.[18] Arguably, this dome achieved more climate "impact" than any religious or administrative dome ever has, or Buckminster Fuller's geodesic biospheres[19] ever will. Reckoning with this reality inspires two questions – whether architecture is even capable of even *leaving the laboratory* – or frankly, whether it even should.

beyond systems-collapse stararchitectures

For architects disinclined to build escapist, extraterrestrial architectures for baddy billionaires, there remain some more ethical possibilities to explore, thanks to the ability of climate collapse to turncoat from prolific starchitect into generous client. While the former seeks to colonise typologies, the latter wants new ones, demanding an exponential proliferation of cooling centres and climate refugee camps. Whatever architectures may manifest, none will be capable of sustaining human life once the atmospheric temperature makes human survival impossible. Adaptive reuse will thereafter repurpose all architectures as mortuaries or mausoleums whether architects intend them as such or not. Beyond the more bleak end-typologies, other ethical and ecologically commissions will emerge, such as designing solastalgia centres[20] or seed banks. It is also anticipated that halting construction will not be a choice, but an inevitability, as the anticipated collapse of systems ends established supply chains. And, as food supplies to cities start to dwindle, designs that enable edible

environments composed of plants and their pollinators to envelop and permeate existing architectures and infrastructures could offer immediate relief to the burgeoning numbers of urban inhabitants already contending with food insecurity. "Permaculturing" architecture – by creating mimetic, integrated, evolving systems of self-perpetuating plant and animal species[21] could be one way to retro-fit cities with agriculturally productive capabilities.

decolonising demolition waste

Emanating rodents' relationship with waste will require an end to the very concept of anything ever becoming waste in the first place. Giving agency to other species will enable "nature" to re-ground and reroot. As less and less of the world's land mass becomes inhabitable – for example, approximately 4 of the earth's 510 million sq. km of land is degraded or lost to desertification each year[22] – colliding ecosystems will increase multi-species densification, making cohabitation inevitable. When faced with deadly interspecies incompatibilities, architects will be presented with an opportunity – or rather, an unavoidable responsibility – to play a collaborative role in developing the hybrid scaffolds, systems and structures needed by the multispecies that the climate emergency is already forcing to live in unnaturally close proximity to each other. Designing for non-human clients, stakeholders and end users will require new skills in "inclusive" design. Long after humans have perished, the toxic materialities of their anthropocentric edifices will not. Designing for deliberate, organic decomposition will be one way that post-human architecture contaminants

could be limited or eliminated, and may yet become the greatest act of decolonisation that humans ever prove capable of.

escaping the cult of formalism fetishists

It seems safe to assume that human communities already contending with climate collapse-facilitated poverty, fear, hunger, displacement and loss – approximately 3.6 billion people at present[23] – will not experience a reduction in their suffering by increasing the number of zero-carbon buildings. Moreover, any profession attempting to assert that the "solution" to a climate "problem" caused by making, consuming and/or then wasting too many objects is to make more of the same objects is not a "profession" but a cult, that by definition isolate their members from friends and family on the outside (or in this example, from grounded and informed climate science communities) punish doubts or questions (with architectural tautologies) and require inordinate sacrifices and money from followers, who are closely controlled – which sums up the high cost and low remuneration of education and professional practice perfectly. Freedom from any cult – even one worthy of the working title, the *Latter day Church of Formalism Fetishists* – is not impossible, however. Having been urged by the architect editors of this book to inspire *"designers and architects to initiate change",* it seems symptomatic of some form of anthropogenic, narcissistic malaise that the impending extinction of 8.7 million species[24] has not yet proven "inspiration enough" – but that the "opinion" of one fellow cult member might be. According to an aggregation of cult

recovery recommendations issued by support groups, the first step is always acknowledging the problem, so it makes sense to start with my own. I hereby admit that as an architect and architectural educator, I have been complicit in climate collapse. I admit that I have dedicated my life towards upholding and advancing the practices and principles of a discipline and a profession that has stubbornly remained deferential to narco-capitalist power. I admit that in efforts to distract myself from this truth, I convinced myself that educating the next generation of architects was an act of passionate protagonism and not a form of unacknowledged narcissism. And, I admit that my efforts to inject and/or advance ethics, equities and ecological responsibilities into a destructive system via the arterial veins of architecture's curricula, scholarship or institutional leadership did not put an end to the destructive system – but instead gave it a more credible veneer, a distracting disco mirrorball of fleeting fragments, hollow of any real impact.

defibrillating design thinking

In light of these admissions, and, as part of my rehabilitation, I accept that the most effective responses to climate collapse are currently being achieved by other disciplines or professions and not my own. I accept that I must no longer partake in techno-utopian or pro-topian design or in other similarly addictive, mind-altering substances in efforts to avoid reality. Instead, I recognise that any design-thinking led efforts at reduction, resistance, resilience, restoration, or even re-rewilding will not be able to fully recover what has already been lost. It is only by making these admissions that it becomes possible to see

how architects' exceptional, three-dimensional problem-solving skills, could play a positive role in developing effective responses – but only if the outcome is not always and automatically *a building.* To insist that it should be is demeaning – and damning – of the talents, capabilities and potential for compassion within the entire profession. While it might feel as though it is "too late" for many established, older architectural educators and architects such as myself to develop expertise in other more directly useful ecologically fields, it is not too late for humans to agree to put an end to pedagogies and professional practices that perpetuate planetary pain, indirectly or otherwise. Defibrillating design thinking requires architects to become as expert at inaction as they are at action. And while defibrillators are often wrongly assumed to be able to restart a stopped heart, they cannot. What they really do is detect *unnatural rhythms* and only then stop the heart, giving it the agency to return to its *natural rhythm.* If architects are willing to resist the design impulses and allow a moment to reimagine a sense of planetary purpose, there is every hope that thereafter, architects agency can achieve ecological efficacy. By not defaulting to design "thinking", outcomes inspired by design "feeling" become possible. The question is not what kind of architect we want to be, but what kind of ancestor we want to be.

And as things fell apart
Nobody paid much attention
You got it, you got it

I dream of cherry pies,
Candy bars, and chocolate chip cookies
You got it, you got it
We used to microwave
Now we just eat nuts and berries
You got it, you got it

This was a discount store,
Now it's turned into a cornfield
You've got it, you've got it

Don't leave me stranded here
I can't get used to this lifestyle

"(Nothing but) Flowers", a song by
Talking Heads, composed by David Byrne.

Lenape Land acknowledgement
This chapter was written in Brooklyn, New York, within the unceded homeland of the Lenape people, Lenapehoking.

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(de)signs as response[01]

martín ávila

You and I have wondered many times what something is. In forests, cities, and other places, we have encountered things that we just did not know what they were, what they did, nor why those things were there. In cities, where most things are controlled and made by people, we still encounter things that are not directly accessible to interpretation based on the way they look. Even at home or at our workplace, have we wondered how simple things such as doors or windows could be opened, or lights turned on. Not to mention the many artefacts that require instruction manuals to be operated at all, from mobile phones to air conditioning systems, to alarm clocks and countless others.

We are constantly interpreting the places where we are to make sense of environments and access all kinds of things: food, recreation, help, and everything else. All living beings do this. In urban spaces, we share an understanding of the functioning of places based on the guidance of physical constraints, and agreements of all kinds of codes and symbols. Through these conventions, we have managed to include many humans (not all), but very few (if any) other-than-human creatures, disrupting the patterns that they seek in the places where we live by reshaping them for human purposes.

Many other-than-humans live in cities as in any other place, and whether humans want to communicate with other beings or not, there are always interpretations of the things that we create by all kinds of beings. They navigate these places based on their own perceptual and behavioural capacities, but in their dependency of things that are becoming rare or no longer present (specific plants to pollinate, insects to feed on, cavities to find shelter, distances to travel, etc.), human constructions displace them, not taking their needs into account and make them more vulnerable.

It is this interruption of interdependencies that undoes the living. Their disappearance is a threat to life, human and other. Their disappearance and our lack of acknowledgement of their lives is a retreat of life. Like everything else, the commons of air, water, or food, to mention three essential ones, are enacted by interdependencies, mutually constitutive processes that form one another. Things exist at all only due to the dependence on other things.[02] At the moment of writing these words, "I" depend upon many things that make my body not totally distinguishable from its surrounding environment. We depend upon things that we normally take for granted. For example, I depend upon the air that I am constantly breathing, and the water and food that I previously ingested, which form part of my metabolism. In a real sense, these not only "maintain" but constantly "create" me. If the air that I breathe did not have oxygen, a series of processes would lead to my collapse within minutes and "my" relations to the "environment" would change radically. Needless to say, that the amount of oxygen in the air depends upon plants of all kinds producing it through photosynthesis, which in turn are dependent upon myriad processes that we cannot take for granted. The dependencies of soil, plants and sun enact the first steps in so-called food chains, since plants are eaten by herbivores who in turn are eaten by carnivores, who in turn, once they die, become food to decomposers and microbes, making available nutrients to soils and plants, continuing the cycles of regeneration. Dependencies across a continuum of living with non-living entities. Through these processes, we bring forth worlds by living,[03] and understanding the worlds brought forth by humans is crucial to become articulate about the enaction of what is natural for humans to produce: the artificial. Yet the dominant culture of the artificial does not

participate in the lifecycles of most beings, enacting destructive patterns which are not conductive to the affirmation of life.

Can we take other modes of being and perceiving into account to create a design culture that is life-affirming by participating in the lives of humans and others in ecoliterate ways? The answer is yes, and it demands a paradigm shift, for a design practice that moves away from exclusively anthropocentric interests to a practice that is ecocentric and responds to the many tensions of multispecies cohabitation. A design practice attentive of relations and their becoming, rather than of things and their being. A culture that cultivates the relationality of the natural-artificial continuum that may be called natu-recultures, urban ecologies, agroecosystems, and other names, provided that these names indicate and help us to slow down, and to pay attention to the biotic-abiotic continuum.

I believe that one of the keys to make this happen is to pay attention to *signs* and how *form informs*. What encounters are *sign*ificant to us? What encounters are *sign*ificant to others? What others? What for? Do lives depend on these? For food, for shelter? This would be a practice of design as (de)sign, in its insistence to care for the signs that are created across this continuum, that cares for the sensory materials that living beings encounter and the possibilities of these to inform behaviour.

Complementing the work of conservationists, what I am advocating for is an alternative design culture that tunes into localities of human dominated spaces such as urban ecologies and agroecosystems, a practice that scaffolds the ecological realities of a place.

If we understand scaffolding as a temporary structure for holding or supporting something, such as workers and materials while repairing or constructing a building,

we can think of all kinds of structures that support all kinds of things; as such, words become devices that support cultural development[04], tables become devices that support eating together in particular postures, and so on. In this sense, specific designs may materially scaffold a situation, as in the structure that holds the workers of a building, but there is another layer of scaffolding that is enacted by these things: *semiotic scaffolding,* which is relational and enacted by complex webs of signification. Semiotic scaffolding is something that "canalises further behaviour. It is the frame for habits… scaffolding is what results from learning" as described by biosemiotician *KALEVI KULL*[05], therefore scaffoldings such as words or tables can, in their turn, scaffold further behaviour and afford refining conceptual models, or eating habits.

To scaffold the ecological realities of a place, implies tuning into the needs and capacities of other creatures through material scaffoldings that can support their habits. This is crucial since the patterns that they are habituated to are disappearing due to human intervention. A type of designing that establishes dialogic relations with other creatures, by attending to their signifying habits as they relate to the things we design. A type of designing that is response-able[06] by being adaptive and able to revise the signs that scaffoldings inscribe for the species involved.

What if we were to use a hyphen in the word *alternative* and write *alter-native* to help us think of the relations enacted by the artefacts we devise? I suggest that by using the word *alter-native* to describe artefacts' relations to environments and beings, one indicates the *alterity* of a thing, its own foreignness to environments by being artificial, fabricated by humans. Naming something *alter-native* also demands thinking how some-thing *alters* the relations to those that live in an environment,

and how it makes them different in some way. An alterity which additionally demands thinking how these things may be designed for co-adaptation by acknowledging multiple species' capabilities. Through these ongoing considerations, the notion of *alter-natives* can help us to conceive artefacts that are alternatives to the current paradigm of artefacts designed without attention to the ecological realities of the places where they will be constructed, used, or discarded. As such, what may be understood as *alter-natives* are artefacts that, to the highest possible degree, participate in the affirmation of life processes, as opposed to most artefacts which create abstraction and remoteness to the living and by means of their very global character claim to "function" in any environment.

Yet, it is not strictly the global character of these artefacts that is threatening life systems, rather it is the erasure of the localities and the biotic links by means of the lack of recognition of the biophysical realities of the different places where these artefacts are produced, used, and discarded. Artefacts may still be coupled to global material streams, if the global network of actors that provide the product-service-system manages to affirm the biophysical constraints through the relations of the product and by-products that affect the local ecosystems at the different stages of its life cycle, from production to discard. The category *alter-natives* refers only to the status of artefacts produced by humans, addressing how varying responses at different scales relate to locations as they participate, or not, in the enlivening of those places.

By striving to produce *alter*-natives that participate in the *semiosphere*, that is, in the enactment, production and circulation of signs and thus, in ecological processes, material cultures may emerge where artefacts *diversify* by attending to the multiplicity of the signs of life[07], rather

than to the unidirectionality of financial interests or the unilateral inertia of human performativity. Since what is at stake is the reworkings of a dominant material culture that has become synonymous with consumption (product design), it is of particular importance to frame the effort to conceive artefacts as alter-natives, as a critical approach that "must aim to replace the consumer-driven narratives of place that mark our lives by different ones that make our ecological relationships visible and accountable."[08]

Choosing to ask whether devices can be *alter-natives,* demands unfolding whether that happens, how that happens, when, where, and for whom that may be. The notion of *alter-natives* does not explain, nor explicate; it demands answers, specific, situated answers, the implications need to be unfolded, traced, maintained, and actualized.

By highlighting the word "native" with the hyphen, I am not suggesting a binary and simplified opposition native-alien. To strive to become *alter-native* does not mean to claim "nativity", "indigeneity", or "endemicity", rather, it is a process of "nativisation", "indigenisation", or "endemisation" through a search that attempts to affirm the possibilities of behaviour of those that live in a given place, some of which may be unique to the environment (endemic or indigenous), while others may be natives or foreigners to the places they inhabit.[09]

What is at stake is the enactment of enlivenment through the artificial. While human and many other species are generalists (to varying degrees), numerous species are specialists and have co-evolved through specific relations with other species of the places they inhabit, developing co-dependencies and unique forms and processes in response. These niched capacities make them vulnerable when local differences are not recognised.

It is in relation to these vulnerabilities when the work of affirmation may lead to enlivening compositions.[10]

Amid so many absences of living creatures displaced by our designs, there is an urgent need to enact a culture that re-links to the living. This would be a practice of design as (de)sign, in its insistence to care for whom form informs and how signs matter as they scaffold a multitude of ways of being and the processes of life.

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‘I think it comes back to the lack of distinction between our needs and desires, our over-emphasis on thinking and not on feeling, and, the ways in which we seek to assert authority over each other. the ways in which we discriminate against members of our species are also mirrored in our relationship with other species, too.’

— harriet harriss

Excerpts from the opening discussion with James Auger (ENS Paris Saclay), Harriet Harriss (Pratt Institute, New York), and Martín Ávila (Konstfack, Stockholm), moderated by Ivica Mitrović (Arts Academy, Split) initiating the discursive program of the Croatian pavilion at the 18th International Architecture Exhibition – La Biennale di Venezia, in Venice, May 2023.

‘educational systems represent a fundamental constraint because the way we educate has evolved over hundreds of years.’

— james auger

‘our pedagogies are not keeping pace with the challenges being presented by the climate crisis.’

— harriet harriss

‘the fact that we are now
starting to acknowledge
all species as cohabitants,
that’s already, in many ways,
kind of a breakthrough.’

— martin ávila

‘it is a fact that less human action and more human inaction will give other species a greater chance to rehabilitate.’

— harriet harriss

PART TWO

workshops & discussions

community resilience as a hope for the future

Ivica Mitrović and M Buonincontri

Workshop held in February 2023 at the Master's study programme at Politecnico di Milano, School of Design , led by Ivica Mitrović and M Buonincontri and hosted by Francesco E. Guida.

MARGINALIA, A SPACE FOR SPECULATION (PREFACE BY M BUONINCONTRI)

Future is a tool often used in speculative design practices to visualise a portion of time and space standing somewhere in front of us, to contextualise change and to exercise difference. During the workshop, students were challenged to speculate specifically on near-future scenarios, taking into account the changes currently happening to climate, nature, economy and society. A near-future is feasible, it is a time in the future but not too far away – halfway – almost a stretched version of the present.

To prepare to leap in the near-future, students were also asked to connect to local bottom-up communities, collectives and activist groups to specifically research how these radical examples of resilience and survival have been organising and operating to sustain themselves. What was already interesting in this stage is how, in a class formed mainly by international students, the very meaning of the word "local" gradually stretched and became broader – proving that local is where we live, local is where we come from, local is what we know, local is a type of experience, an access point. Local is personal and personal experiences are often left aside when it comes down to other design practices.

Ursula K. Le Guin in the essay "The Carrier Bag Theory of Fiction", instead of isolating a utopic future scenario, focuses on the past and speculates on the origin story of humanity redefining technology as a cultural carrier bag rather than a weapon of domination.[01] In doing so, Le Guin makes space for another story, less linear and progressive, gathering what was left in the margin by the dominant narrative. This longing for another perspective also comes from a very personal, not less radical nor political need. She writes "[...] it also grounds me, personally, in human culture in a way I never felt grounded before. So long as culture was explained as originating from and elaborating upon the use of long, hard objects for sticking, bashing, and killing, I never thought that I had, or wanted, any particular share in it." By speculating on the past, Le Guin shows that (speculating on) the future – the preferable, the possible, the plausible, the probable one – is just a

strategy. The true core of speculative design is to explore alternatives, broadening perspectives, and bringing what is in the margin to the centre.

Before the introduction of the printing press, so-called "marginalia" were those comments, glosses, critiques, doodles, or illuminations – fragments of thought scribbled in the empty remaining area of the page, a space of criticism, playful speculation and leakage. The first books were filled with notes and considerations in the lesser space of the margin, telling different versions of the bigger space story. In the same essay, Le Guin says that "it is the (dominant) story that makes the difference. It is the story that hid my humanity from me, the story the mammoth hunters told about bashing, thrusting, raping, killing, about the Hero. [...] The killer story." The story makes the difference and the difference is grass-rooted, nurtured in the margins.

Community resilience at Politecnico di Milano.
Photo: Ivica Mitrović

THE BRIEF

The goals of the intensive five-day workshop at the Master's study programme at Politecnico di Milano, School of Design, were to: (a) speculate and sketch possible local, near-future community resilience as a way of (b) reclaiming and bringing back a positive vision of the future, (c) redefining our relationship with the changing nature and (d) thinking about different approaches, tools, methods and mechanisms for this transformative process via design practice. These goals were challenged via future speculations, present-time research and proposed concepts communicated by various design outcomes (services, objects, design interventions and others).

The workshop started with speculations of the probable climate changes driven near-future scenarios in the local context (selected by the students themselves). Due to the fact that the class were international, project locations were coming from Milan and surrounding areas, the rest of Italy (from Rome to Enna in Sicily), speculating about the climate future of the central Mediterranean, but also including students' home places around the world (i.e., São Paolo in Brazil or Lake Urmia in Iran). The second step was to focus on the present and investigate the local, bottom-up community practices which show a certain level of resilience via their everyday activities in dealing with future and the present crisis. For the final phase, the task was to develop a near-future speculative concept based on the imagined probable scenario and mapped local resilience community, i.e., to try to use those existing bottom-up practices for building different, community-preferable futures.

OUTCOMES

Speculative design has been recognised primarily as an approach and attitude, rather than a closed design practice with strict methodology.[02] This allows designers (and other practitioners) to use their own acquired methods, tools and techniques in the design process. For workshop participants, this opened possibilities to challenge

their design perspective, moving from traditional, affirmative problem-solving to a speculative and reflective approach in their everyday practice. Looking into the future via speculative thinking, they have addressed issues and reflected on the present, situated in a local context with local people as an environment, which is well-known by them.

They speculated about near-future scenarios around climate changes, with a focus on a few decades into local futures. This includes extreme heat waves, new migrations (from both South and North), new pandemics, failure of international production chains, cities going underground, nature "striking back" and reclaiming the urban zones, and a number of other scenarios, all radically altering the economic and political context inducing new class stratifications. New resilience actors included anti-system groups, social centres, eco/permacultural communities, physical forums, anarchist communities, illegal funk music party communities, upcycling communities and others. Inspired by these practices, approaches and activities, the students developed speculative concepts focusing on respect and active engagement with the environment, twisting anthropocentric models, looking into the coexistence of humans and nature, speculating about the role of animals in society, and experimenting with how knowledge can be transmitted. Ultimately, they tried answering the question "are we able to transform the probable not-so-promising futures into human-friendly conditions?"

Critical of the romanticisation of the arcadian past and of historical constructs such as the concept of nation, national identities and heritages, the students' speculations resulted in various non-affirmative design approaches such as a design for cohabitation, "bio-driven" and "fungi/mycelium" design, new modes of non-verbal sub-messages, analogue communication systems, manifestos, vernacular interventions and others. Even without obtaining real, tangible or broad changes, the workshop outcomes, as conceptual short-time projects, could be seen as a sign of resilience, shared passion and dreams to overcome challenging times, especially for communities with no/little hope.

REFLECTIONS

The workshop provided a series of methods, tools and approaches giving students the possibility to challenge prevalent systems and world views, abandoning conventional design practices and designing without the need to solve problems. In their words, i.e., using a "community-inspired aggressive illegal DIY approach," and imaging bottom-up problem-solving practices they "challenged the established design deontology, showing us how communities manage social needs related to economic marginalisation." Moreover, inspired by small local communities, they started thinking about "a structural and administrative change capable of reorganising the structure of the entire city." And not only cities. Challenging their perspective both as designers and as human beings, they were critical of the "unconscious application of a Western view on different realities," opening decolonial, non-Western-centred possible futures with a different role of the so-called Global South. Another important focus point for the students was looking into possible post-human futures where "nature continues to provide signals of the possible reversal of roles, imposing itself to reassert its presence on the territory and stem the anthropocentric drift."

Due to the short duration of the workshop, the dynamic was mainly focused on the process (speculations, investigations, research, developing concepts and discussion) rather than on the communications and prototyping part. To investigate how, via speculations about the future, we could address and make actions and changes in the present. The workshop intended to provide students with a speculative approach as "one more tool in your designer's toolbox".[03] Outcomes and reflections again showed the strong potential of a speculative approach in the educational context, as a reflective tool for students' practice and perception of design and as well as a tool for thinking about and imagining the role of design in building a better future (and present). Investigating how to move forward using design in the participative process with both communities and nature.

Community resilience at Politecnico di Milano.
Photo: Ivica Mitrović

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“MYCELLANEOUS” WAYS OF LIVING

This speculative project explores a future scenario of Milan in the near future, in which climate change would significantly affect access to water and thus the cultivation of fruits and vegetables as we know it. Faced with this scenario of profound change in the raw materials involved in Italian cuisine, the initial question was about the shifts in Lombardy’s cultural identity in the face of future changes in the techniques and species chosen for cultivation, given the new adverse climate. To explore this scenario, the sample “Mycellaneous” ways of living were designed, which exposes, taking an archaeological-educational approach in its design, the core values and artefacts employed in daily activities of the future communities envisioned. Both of these aforementioned aspects are based on current methods and customs of existing groups such as the community surrounding the shared orchard “La Milpa” and different groups aligned with the “Radical Mycology” theory and lifestyle. Their sustainable and anti-capitalistic activity could serve as a response and a way to achieve adaptation, integration and resilience to aid in the enrichment and evolution of Milanese inhabitants’ identity through their active engagement and exchange with the land.

Students:
Diego José Valdivieso Benavente, Huajie Zhang, Nicolás Raigoso, Beini Mo, Malena Paz Del Zotto and Carmen Framiñán Galán.

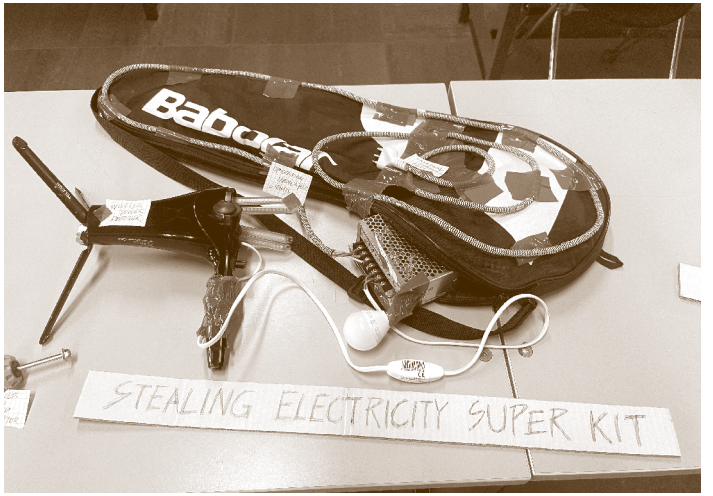
PRINCIPLES FOR
“BIO-DRIVEN” DESIGN
What does “bio-driven” refer to?
Taking values from fungi, vegetables and previously-overlooked forms of life and applying them to daily life, relationships and problem solving.
Attempting to achieve a more ecologically conscious, holistic way of approaching the numerous difficulties that environmental changes will surely have in store, and ideally, help the planet heal and make conscious, durable changes.
COLLABORATION
PLURALITY
RESILIENCE
RESPECT
FLEXIBILITY

“Mycellaneous” ways of living

SUPER CHOQUE STUDIO

This is a speculative design project that aims to provoke a discussion about design practices in a possible dystopian world devastated by global warming. São Paulo, the near future. The protagonist of the story is Murilo Santos Periera, an eccentric technician who uses his skills to build and sell equipment in order to help his “baile” community to cope with the energy crisis. Indeed, to make the “baile” funk parties happen, poor communities of favelas have to steal electricity from the wealthy downtown. The whole project can be experienced by exploring Murillo’s studio and the exterior environments, an immersive narration into the speculative artifacts and the Brazilian vernacular culture. Super Choque Studio deals with socioeconomic issues with an aggressive DIY approach. Imagining bottom-up problem-solving practices (inevitably illegal), the project challenges the established design deontology, showing us how communities manage social needs related to economic marginalisation.

Students:
Luiz Carlos De Souza Junior, David Hazan, Ye Li, Alessio De Nicolò, Mona Abolghasemi and Nima Ahmadi.



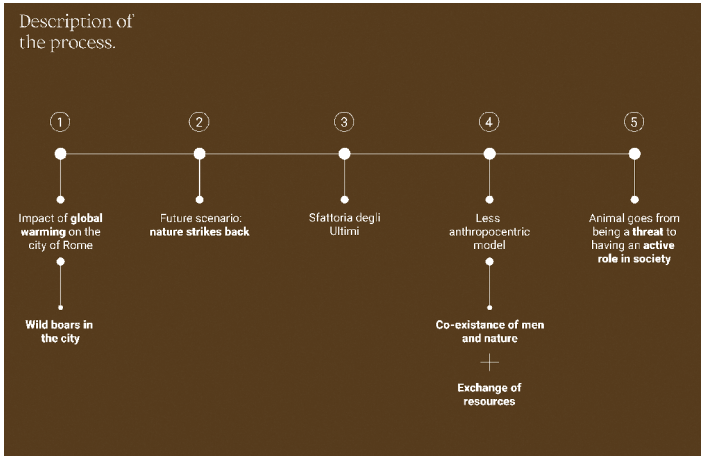
Super Choque Studio

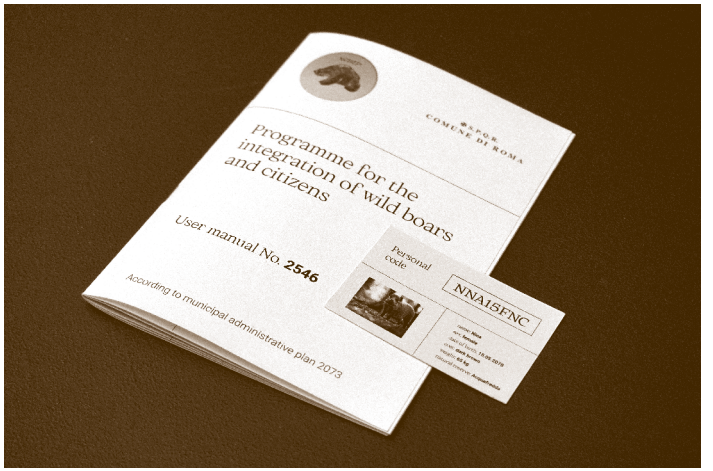
SUINUS POPOLUSQUE ROMANUS

This speculative scenario is inspired by the current state of urban administration in Rome. The city's condition has increasingly deteriorated due to both the climate emergency and state mismanagement. Speculation examines the consequences of emerging fauna in the city, focusing on the circulation of wild boars. In the near future, the containment of the animal is no longer possible and man must adapt to a life that is no longer anthropocentric. Every citizen of age receives a citizen's handbook, assigning them to a wild boar in one of the natural areas in the city, to be responsible for the sustenance of the animal with their waste. In return, the animal will contribute to the citizen's energy supply through their biomass and movement. The idea behind this work is the inherent opportunistic nature of humans and animals. To be open to coexistence, humans must perceive a tangible benefit for themselves and vice versa. The provocative approach of the project does not aim to provide solutions, but rather emphasise the ironic situation of the city where the original natural order of things is slowly but strongly being restored. Nature provides signs of a necessary change of course, ignoring them is to put the central role of humans at risk.

Students:

Denise Beretta, Noemi Capparelli, Matilde Cirafici, Francesca Curati and Claudia Pezzini.




Programme for the integration of wild boars and citizens
User manual No. 2546
According to municipal administrative plan 2073
Personal code
NNAI6FNC

Suinus Popolusque Romanus

design+science summer school: paraintelligence

Boštjan Botas Kenda, Emil Kozole, Sigrid Bürstmayr, Nejc Prah and Ivica Mitrović

Design+Science Summer School was held at the Academy of Fine Arts and Design in Ljubljana in July 2023.

THE BRIEF

The goals of the Design+Science summer school[01], which include the development of skills for effective collaboration in interdisciplinary teams, understanding the role of design and science in a social context, and gaining insight into the synergy of collaboration between interdisciplinary fields have been challenged by this year's topic of "paraintelligence". Here, the term "para", which means "beyond" or "beside", in the context of intelligence refers to a type of intelligence that exists beyond what is traditionally recognised as intelligence, including notions such as intuition, creativity, and emotional intelligence that are often overlooked in traditional definitions of intelligence. Artificial intelligence, on the other hand, refers to the intelligence displayed by machines that have been programmed to simulate human cognitive functions such as learning, reasoning, and problem-solving. When we think of intelligence, we usually think of anthropocentric cognitive abilities such as problem-solving, logic, and reasoning. However, intelligence is actually a complex and multifaceted concept that goes beyond these cognitive abilities. For example, fungi, such as the slime mould *(Physarum polycephalum),* also exhibit intelligent behaviours such as navigation, memory, and adaptation. Through a combination of lectures, discussions, and hands-on activities, the summer school aimed to redefine the definition of intelligence in order to understand and predict how it will evolve and what the consequences will be for human and non-human beings on this planet.

Paraintelligence at Divača.
Photo: Tine Lisjak

PROCESS

The school included 19 participants, from BA and MA students and researchers to young professionals, from 8 countries and from various backgrounds (design, education, science and humanities). The five-day workshop included morning lectures, and inputs from experts from diverse fields from design and art to IT and material science, including a one-day field trip to the Divača Cave. The school was not based on a fixed design methodology, rather it was flexible and allowed groups to develop their own path during the process, based on an interdisciplinary connection between participants in the arts, humanities and sciences.

The school was divided into four stages.
(1) Input – lectures and workshops by international experts that gave participants an insight into the specific field they were addressing. (2) Output – group work in small groups, led by mentors, with the goal of developing concepts that address the detected challenges. (3) Presentation – group presentation with external evaluators' feedbacks. (4) Reflection – participants' reflections on the educational process and their own work.

The internal process was conducted in five phases. (a) Understand – sharing experiences, building a mutual understanding of the topic and language and finding the specific domains of the general topic. (b) Define – investigating problems and challenges in the domain. (c) Ideate – developing concepts as reflections to the challenges, building scenarios. (d) Prototype – designing concept presentations in any format that fits. (e) Present – final presentation, discussion, evaluations, reflections.

REFLECTIONS

Looking into the challenging topics of intelligence for a brief, as a hot topic today, we wanted to avoid ending in various critical or affirmative concepts around the omnipresent AI hype. The open concept of "para-intelligence" provided great inspiration and generated intensive discussions about the term intelligence, with a criticism of the human-centred connotation of this term, looking at what is "intelligent", "non-intelligent" and "para-intelligent". All developed projects looked beyond the human and rational definition of intelligence, observing intelligence from a more-than-human, holistic perspective. Re-thinking this concept, projects speculated about various future paths, using concepts of a fictional corporation, live-action role-playing game, TV show and artistic multisensorial performance, as case studies of changing this human-centred perception of intelligence.

Paraintelligence at Academy of Fine Arts and Design, Ljubljana. Photo: Tine Lisjak

ACKNOWLEDGEMENTS

The summer school was organized by the University of Ljubljana (Boštjan Botas Kenda, Emil Kozole, Jernej Kejžar and Marina Klemenčič), the University of Split (Ivica Mitrović), the FH Joanneum, Graz (Birgit Bachler, Sigrid Bürstmayr and Daniel Fabry) and PiNA, Koper (Borut Jerman, Maja Drobne and Ana Markežič).

Experts: Stuart Walker, Eray Sertaç Ersayin, Laura Tripaldi, Eva Fischer, Danica Sretenović, Gaja Mežnarić Osole, Saša Spačal, Matevž Pogačnik, Uroš Krčadinac, Francesco Ermanno Guida, Mia Roth-Čerina and Karl Stocker.

References

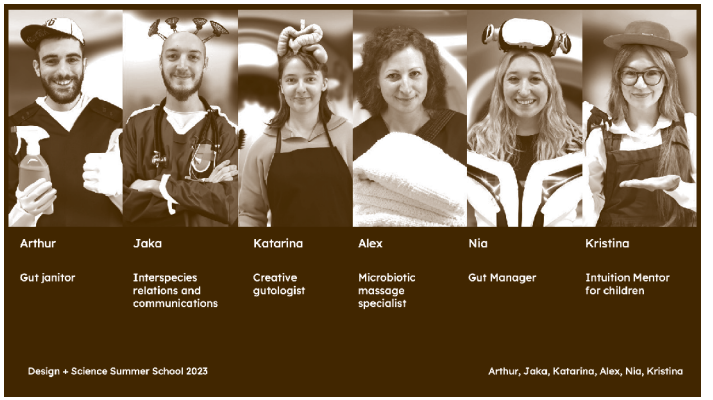
01 https://www.designscience.school

THE GUT FEELING TRAINING CENTRE

In the post-digital era, people are becoming increasingly disconnected from their bodies and surroundings, relying heavily on technology, which leads to a collapse of self-awareness and strained relationships. The aim of the project is to recognize the importance of the very individual para-intelligent intuition – the connection between our brain, gut and the microbiota living there. This system that is inherent in human bodies and helps us guide emotions and decision-making processes. GRIT (Gut Response Intuition Training) is an intermedial and physical space that invites individuals to reconnect with their inner selves and strengthen their intuition. It offers a modular and flexible space, where individuals engage in diverse exercises that stimulate their intuition and gut feelings as well as enhance their emotional intelligence. The training inspires collaboration, enabling a better understanding and acceptance of different species.

"Let your gut guide you through an unconventional environment of decision-making exercises at GRIT. Challenge yourself, raise self-awareness, and build connections. It's time to reconnect with your inner self and embark on this transformative journey."

Team:
Nia Gombač, Jaka Oman, Kristina Selinski,
Alexandra Kraler, Katarina Babič Derenda,
Arthur de Liz Sperb (mentor: Sigrid Bürstmayr).



The Gut Feeling Training Centre

SUPREME SPECIES SIMULATOR

The prevailing notion of intelligence often prioritizes rationality and efficiency, overshadowing the significance of emotional intelligence and empathy. However, it is through emotional intelligence and the ability to imagine the experiences of other beings that we can foster social functioning and meaningful connections. The project idea originated from the concept of educational LARP (Live Action Role Playing) and aims to inspire hope, empathy, and understanding of the interrelations between species – such as Mycelium, Japanese knotweed, and Tesla – through first-person experiences. The exercise of embodying the other, the beings we disregard and often objectify, can bring us closer to imagining their complexities and different forms of intelligence. Supreme Species Simulator is an immersive game experience for the future where empathy is a commodified form of intelligence. The characters in our game are the ghosts of an ecological future – not the modern heroes that compete and surpass others but collaborate. They are writing the silent stories of our existence. Their interconnectedness and collective intelligence often seem inconsequential in the present time, but that may not be so in the future.

Team:
Jaanika Malla, Bianca Bauer, Ana Laura Richter, Sofia Gonzalez Villalobos, Alexandra Samandarova and Larissa Rodiga (mentor: Emil Kozole).

Supreme species simulator

INTERSPECIES PODCAST

We imagined a scenario in which communication between different forms of life becomes possible. It was shown through a two-part presentation, where the first part was a sketch about a podcast hosting various forms of life and the second part was a discussion about the idea of interspecies communication. We focused on the possible consequences of this technology, rather than aspects of how the translation technology could work. The Interspecies Podcast was hosted by a human. The guests included a Bee (air), an Octopus (sea) and the Mycelia (earth). In the scenario, we have discussed and presented different aspects, such as naive attempts of harmonic relationships, utopian ideas of human-nature bonding experience, a human-centric view of everything, and other ways where this technology would only help humans and potentially further enhance the human domination of the planet. The main question still remains – are other species willing to communicate with humans and are there any benefits for them in doing so?

Team:
Eva Popit, Nadja Reifer, Eva Šmigoc, Riccardo Samsa, Gabriela Semanová and Niko Fernandez (mentor: Nejc Prah).

Interspecies Podcast

Interspecies Podcast team.
Photo: Tine Lisjak

THE GHOSTS IN THE DIVAČA CAVE – RESONANCE REVEALED

This is an artistic project that combines imaginative and audio manifestations with Biodata-Sonification and feministic approaches to delve into the mystical realm of the Divača Cave, using rocks carefully collected from its ancient depths as a source of inspiration. The primary goal of the project is to explore the contrasting perceptions of AI and humans. It aims to examine how these two entities perceive, specifically focusing on the mystical creatures that can be imagined within the natural formations of the cave. The project utilizes Biodata-Sonification – a technique that converts biological data into sound – to create an audio representation of the imagined creatures. By employing this method, we aim to establish an interspecies collaboration between humans and AI, allowing for another artistic approach to imaginative and narrative processes. Moreover, it aims to investigate the transparency of the source of power behind AI systems and raises questions about the carbon footprint associated with the learning process of these systems.

Team:
Alexandra Kraler and Nadja Reifer.

The Ghosts in the Divača Cave – Resonance Revealed

feral drifting with lonja wetlands: fragments of more-than-human cohabitation

Open Forest Collective
(Markéta Dolejšová, Jaz Hee-jeong Choi, Andrea Botero and Chewie)

Feral Drifting with Lonja Wetlands workshop was hosted by The Lonjsko Polje Nature Park in July 2023.

INTRODUCTION

The Feral Drifting with Lonja Wetlands workshop involved a 4-day feral, performative investigation of multispecies relations and spatio-temporalities of care that shape the flow of life and death in Lonjsko polje (or Lonja Wetlands), the largest protected wetlands in Croatia. Together with 19 workshop participants, we experimented with *feral ways of sensemaking* that invite open-ended, multisensory, and spontaneous encounters unfolding beyond the bounds of human control.

River Sava, this time of the year flowing peacefully through the Lonja Wetlands. Photo: Aleksandra Drecun

Inspired by the movements and rhythms of local, other-than-human creatures, such as storks, mosquitoes, storms, and the river Sava, as well as the artistic strategies of dérive (including their flaws), we drifted with the local ecologies and invited pathways towards care-full co-habitation. To navigate through these space-times, we experimented with various performative and speculative sense-making practices including walking, listening, storytelling and forming relations.

This feral investigation resulted in co-creative outcomes – or fragments – in diverse forms, such as multispecies rituals, synesthetic maps, wayfinding games, and memory seed banks that were documented as short videos and later turned into the "Feral Fragments of Lonjsko

polje" film. Here, we share the key processes of our collective workshop and reflect on them in relation to the notion of *feral data.*

Storks, the vigilant wetlands creatures, silently observing the landscape. Photo: Aleksandra Drecun

FERAL WAYS, FERAL DATA

Lonjsko polje is an ever-changing land. The regular flooding of the local rivers Sava and Lonja creates a unique, shapeshifting environment composed of alluvial forests, as well as wet meadows and pastures inhabited by different creatures at different times. This combination of diverse habitats and their regular flooding provide the conditions for complex cohabitation of rare birds such as the white-tailed eagle, white egret, grey heron, black stork, as well as many migratory birds and various mammals including spotted Turopolje swine, wild boars, deer, roes, otters, beavers, and wild cats. We arrived at Lonjsko in June after the flood season was over and water had subsided, once again creating a new landscape with all that (re-)emerged along with the water – rocks, driftwoods, puddles, and more.

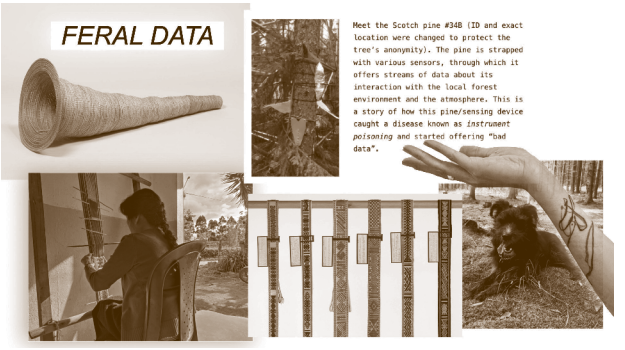
FERAL WAYS
BEYOND HUMAN CONTROL & DOMESTICATION,
SEEDING UNEXPECTED RELATIONS, CHALLENGING
THE DOMINANT NORMATIVITY... AND MUCH MORE

Unexpected (at least to the human walker) encounter of the Open Forest's Chewie and a Bohemian otter.
Image credit: Jiří Dolejš

As Open Forest Collective[01] – a multispecies group of creative practitioners and researchers of diverse cultural and biological origins – we have been exploring more-than-human ecologies in different settings such as forests, forest gardens, wetlands, and cities. Our practice-based investigations experiment with *feral ways of sensemaking*[02] through which we engage with what exists beyond human control and domestication; hoping to explore unfamiliar terrains and seed new, unexpected relations. We are interested in experiencing and understanding how such feral relations may evolve with – or in spite of – the dominant paradigms and normativity.

In our collective work, we often take participatory, performative, and embodied approaches in the form of experimental walks and *dérives* or drifts (spontaneous movement through landscapes guided by chance encounters[03]) with local places and their creatures, both human and other-than-human. One of our intentions with these activities is to explore and experiment with the so-called *feral data,* which Genevieve Bell describes as data that is situated, qualitative, experiential, and messy[04]. Examples of feral data that we experienced or co-created in the past include data woven into traditional belts and eel traps, provoked by tree sensors, or generated by a dog.[05] Our continued engagement with feral data helps us reflect on

diverse more-than-human experiences, epistemologies, and cultures. [06]


FERAL DATA
Meet the Scotch pine #34B (ID and exact location were changed to protect the tree's anonymity). The pine is strapped with various sensors, through which it offers streams of data about its interaction with the local forest environment and the atmosphere. This is a story of how this pine/sensing device caught a disease known as instrument poisoning and started offering "bad data".

Feral data co-created by humans and other-than-humans of various places around the world.
Image credit: Open Forest Collective

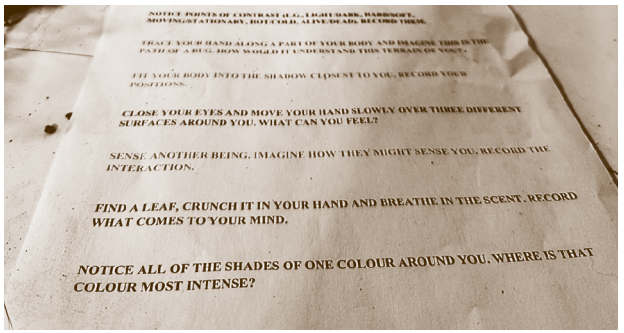
One of the central aspects of our inquiry is questioning what feral data might look – and feel, sound, smell, taste – like in relation to local more-than-human ecologies. We explore how co-creating and engaging with feral data can help us make sense of these ecologies in different ways, beyond the kinds of data that are deemed legitimate within the dominant knowledge systems that often prioritise quantification and quantifiability.

FERAL DRIFTING WITH LONJA WETLANDS

We intended the wetlands workshop to manifest in the same spirit, and so avoided applying any particular well-known design methods to produce particular design outcomes. Instead, our intention was to create a space where everyone could spend time with the wetlands and with each other, to explore diverse local spatio-temporalities of life (and death) and make sense of them collectively.

The full workshop group of feral drifters.
Photo: Tradicije Čigoč

Together with 19 participants who were invited to join the workshop through an open call, we based ourselves in the village of Čigoč, in the main local family-run accommodation Tradicije Čigoč – a traditional wooden cottage purposely re-built in an architectural style that is typical for the region. Tradicije was our nest where we lived, slept, ate, talked, and danced together for four days. Our daily wetlands explorations and reflections started and ended in the common workshop room which we named the *CottageCore,* and which we continued filling with various props, prompts, foraged materials, and stories collected through our drifts.


CLOSE YOUR EYES AND MOVE YOUR HAND SLOWLY OVER THREE DIFFERENT SURFACES AROUND YOU. WHAT CAN YOU FEEL?
SENSE ANOTHER BEING. IMAGINE HOW THEY MIGHT SENSE YOU. RECORD THE INTERACTION.
FIND A LEAF, CRUNCH IT IN YOUR HAND AND BREATHE IN THE SCENT. RECORD WHAT COMES TO YOUR MIND.
NOTICE ALL OF THE SHADES OF ONE COLOUR AROUND YOU. WHERE IS THAT COLOUR MOST INTENSE?

Prompts for drifting and moving-with the Lonjsko polje landscape. Photo: Markéta Dolejšová

We took inspiration from the Letterist and Situationists International's artistic strategy of Dérive (drifts) and experimented with drifting as a way to move with the wetlands and its creatures, in order to explore and learn about the relations that make the local more-than-human ecologies. To help everyone ease into drifting, which was a new concept and practice for many participants, we offered a set of prompts that had been co-created for our earlier public event called the "More-than-Human Dérive" at the 2021 Melbourne Knowledge Week and revised for the wetlands workshop. Throughout the workshop, these prompts were further re-imagined and re-created by the workshop participants, based on their daily drifting experiences.

At the start of the workshop, we asked participants to introduce themselves through their favourite other-than-human creatures and move around the wetlands with/as these creatures, which ranged from a snail to a phoenix. After that, the participants formed five groups around the five elements – water, air, metal, earth, and fire – based on the relations these creatures had with the elements within the context of the local environment.

Making sense-with the other-than-human creatures of Lonjsko polje. Photo: Feral drifters

In practice, our wetlands drifts took various shapes and forms, involving activities such as walking, running, cycling, swimming, crawling, foraging, recording sounds, filming, and sometimes simply remembering. After each drift, we returned to the CottageCore to share our different experiences, observations, and sensory impressions with the whole group, slowly shaping the room into a growing (and more intensely alive) feral archive. Doing this enriched our understanding of the more-than-human entanglements across different local spatio-temporalities and reminded us that our evolving relations with Lonjsko polje could manifest as any and many things in different places and times, even if we could not clearly articulate them here-and-now.

CottageCore sharing circle and the Air group showing their memory seed bank. Photo: Tonči Čerina

At the end of the four days, each group shared their experiences and co-creative process as the *Feral Fragments of Lonjsko polje* – performative acts in diverse forms, including a nonbinary wayfinding system, a synesthetic map, a memory seed bank, a meditative embodiment of a river water, and a ritualistic speculation on local biodynamic culture that we present below. The groups documented their fragments as videos that we later edited into a short film that is available online.[07]

Through the process of making the fragments, we were able to collectively explore, learn about, and make sense of the different more-than-human relations that make up the Lonjsko polje ecologies. For us, these fragments are co-creative expressions that also serve to be feral data enriching our research, as well as our living-with more-than-human worlds.

Making sense-with the other-than-human creatures of Lonjsko polje. Images credit: Fire group

FERAL FRAGMENTS

The following feral fragments were co-created by the five groups of participants who connected, via their other-than-human creatures shared at the start of the workshop, around the five elements – earth, water, air, metal, and fire.

FRAGMENT EARTH: HORN OF PLENTY

By Aleksandra Drecun, Korana Mileusnić,
Laura Middlehurst and Maria Heinrich.

> "That, I think, is the power of ceremony: it marries the mundane to the sacred. The water turns to wine, the coffee to a prayer. The material and the spiritual mingle like grounds mingled with humus, transformed like steam rising from a mug into the morning mist. What else can you offer the earth, which has everything? What else can you give but something of yourself? A homemade ceremony, a ceremony that makes a home." (Robin Wall Kimmerer, Braiding Sweetgrass)

Disguised as our earth-bound feral alter-egos, we roamed the land into the forests and pastures of Lonja for three days, gathering the natural treasures that called to us. We positioned ourselves as humans in this fluctuating and inherently anthropomorphic landscape, wanting to honour the land and animals, whilst building on the symbiotic relationships already inherent in this fragile environment.

In the realm of agricultural innovation, Rudolf Steiner's vision shines through biodynamic culture, portraying farms as holistic realms where soil, plants, animals, and human care intertwine seamlessly. This symphony of cooperation is woven with conscientious methods such as composting, the companionship of animals, and an embrace of diverse botanical life. At its heart, the horn manure preparation (preparation 500) encapsulates the essence of this ethos, as cow manure metamorphoses within a buried horn, enriching plants with fortified root systems – a testament to the intricate blend of spirituality and ecological mindfulness that grace the pages of farming history.

We developed a reciprocal relationship of gifting that offers an alternative to the primitive accumulation of natural resources by extending value chains. Our inspiration were the gifts we received from the wetlands, such as small objects, sounds, and feelings. Through these gifts flowed the values of kinship, multi-species connections, and the fostering of care. We gathered these objects in a discarded cow horn, our horn of plenty. This vessel embodied both the myths and relationships within the wetlands and our ceremonial offering of gratitude. The horn of plenty became a ritual, a gift, and a reciprocal act of care.

Cow horn – the horn of plenty.
Photo: Earth group

Embodying the myths and present relationships within the Lonja Wetlands. Photo: Earth group

FRAGMENT WATER: EMBODYING THE RIVER

By Meda Retegan and Anna Martić.

“Embodying the River” is a meditation on what it means to open yourself up to other modes of being and allowing your perspective to shift and to let go of restrictions of what is, and what could be. Water is our impenetrable gift continuing to bind all beings together.

We are bodies in bodies of water regardless of shape and shell. In aiming to seek out this interspecies bond, we allow the feral side within us to reappear. The River takes over and elevates us to a long-forgotten equilibrium.

//

where the light doesn’t reach
embraces are exchanged
life emerges
tossing and turning in all directions

my body is full but longs to be emptied
your body craves pouring
I meet you where I begin
and you end
together we continue from there

//

In becoming,
We let go
From me,
To we

Embodying the river. Image credit: Water group

Bodies longing. Image credit: Water group

FRAGMENT AIR:
WEAVING MEMORIES OF LOST SEEDS

By Sara Gurdulić, Ebba Pijl, Ela Meseldžić
and Daniella Ruffino.

an impulse
a response
moving the landscapes
retraction of the Pannonian Sea poured warmth in
the crevices.
imagine a life of a we/ [as] t [e] land,
wavering corn landscapes lost the linen rituals,
a decaying path of a lost seed tells a story:
of shared labour
of shared leisure
of shared struggles
of shared memories
of the rising tides and -future- rejuvenating cycles
margins are once again diffusing
reclaim the tensions
embrace the tides

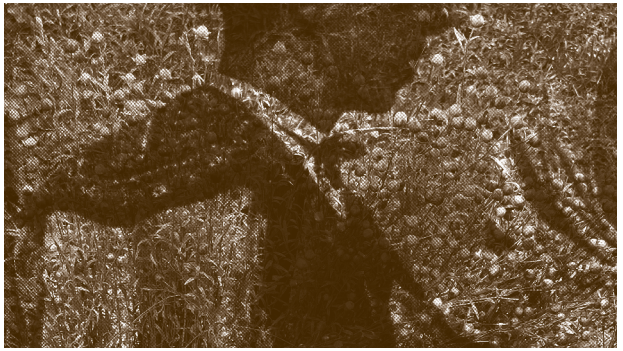
We arrive at the Lonja Wetlands, an ever-changing alluvial expanse. There's no power. A massive storm has swept across the country. We go to bed within the glow of candlelight & thick linen sheets. In the morning we are unplugged and awake to the ebb and flow of the landscape. The wild moss, reeds and oak mingle with domesticated geraniums, corn and plum trees. Water fills and drains, drawing down into the soil and ascending into the air; creating weather patterns, sustenance, and resources. Amid this fecund landscape we meet an old woman weaving linen. Energy from plants, animals and the sun fuels this fine skill. A seeding flax plant sits in a pot.

Can seeds transform into vessels that carry narratives and transcend the boundaries of time?

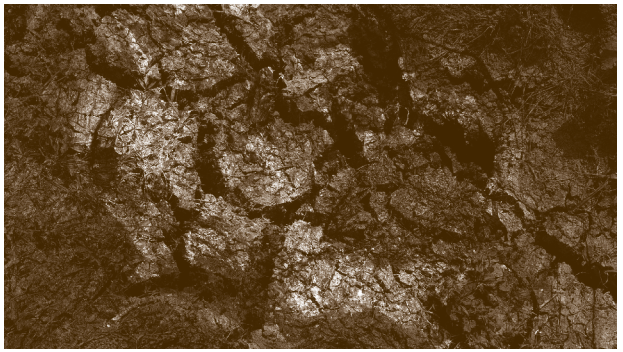
Tales flow freely, unburdened by temporal constraints.

Once common and growing abundantly in this area, for fabric and fodder, the flax represents a wild abandonment from local industries and closer connections to land. Within its husk are the legacies of generations, of traditions and rituals forgotten, songs hummed for plant strength, a heritage interwoven with soil and water and a spirit of resilience that knits past to present. Seed memories can be portals for revitalising traditions that promote sustainable coexistence and responsible stewardship of the land.

Tales of the flax seed and similar entities inspire a remembrance of the profound interdependence that sustains life on Earth, fostering a renewed appreciation for the delicate dance between humans and nature.



Moving the landscapes. Image credit: Air group

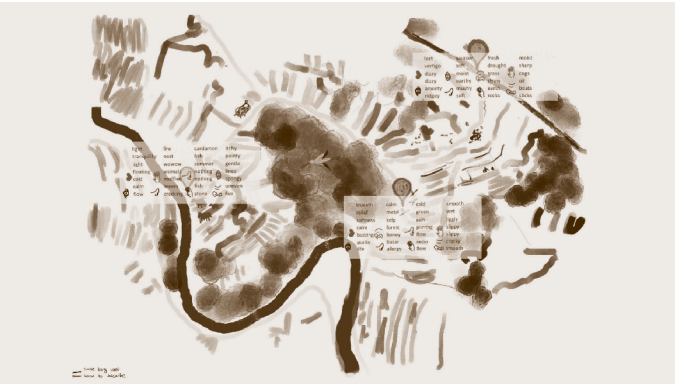


A decaying path of a lost seed tells a story.
Image credit: Air group

FRAGMENT METAL:
IMAGINING WITH LONJA WETLANDS THROUGH SENSORY DISRUPTION

By Inés Fernández Elhordoy, Sylwia Mieczkowska, Ella Papenfus and Nastja Ambrožič.

Prompted to “Find a border, imagine its texture, and taste the landscape” we explored borders with a pinch of imagination. Questions arose: What constitutes a border? Is it a tangible entity or fragment of imagination? The workshop within Lonja Wetlands merged in the in-between spaces of wild-domestic, natural-fabricated, and physical-virtual. Guided by the drift prompt co-created during the workshop, our concept of sensory disruption emerged in probing our own limits and borders as parts of the wetlands. Through synaesthesia, we pushed our sensory, bodily and imagination limits. Gathering data via drifts, we mapped fragments of a synesthetic map of the wetlands. We tried various easy to sense unconventionally – describing touchless sounds by scents, for example. Artificial Intelligence turned descriptions into spot-on (and not so spot-on) images. Boundaries of experience transcended.



Imagining with Lonja Wetlands through sensory disruption. Image credit: Metal group

Sensory disruptions shared with the CottageCore. Image credit: Metal group

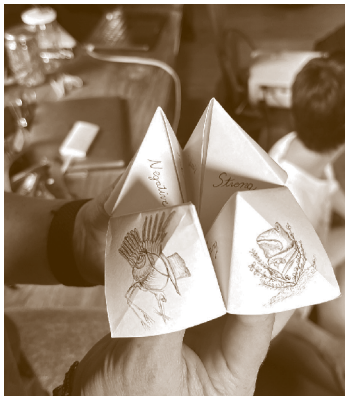
FRAGMENT FIRE: LIMINAL WAYFINDING

By Bethany Copsey and Sarah Kilkenny.

During our feral drifts through Lonja Wetlands, we noticed and were drawn to the liminality of the space. For example, guided by the sun, we found that points of destruction in the tree canopy created a space for new life to thrive, and in decaying wood we saw evidence of life and death cycling. These were not the clear binaries we often witness expressed in anthropocentric thoughts.

Inspired by our drifting prompts, we wanted to play with wayfinding. We disrupted the convention of journeying with a map to a specific location and instead tried to create a toolkit for *drifting away from binaries* – such as dead/alive, nature/culture, feminine/masculine – and towards liminality. We produced a series of activities and games as prompts for both drifting and discussion.

Collecting sensory impressions.
Image credit: Fire group



Sharing tools for drifting away from binaries.
Image credit: Fire group

CONCLUDING REMARKS

Experimenting with feral data that has emerged through more-than-human relations unfolding outside the human-centric datascapes can reveal what may have previously been less visible or in the margins. Feral ways of sensemaking that both result in and evolve through feral data can thus be seen as a form of creative deviation from the dominant rational and orderly knowledge systems, inviting other-than-humans in collective knowledge making. Through our ongoing engagements with feral data – including the Lonjsko fragments presented here – and the many different creatures involved in their co-creation, we hope to explore the following questions:

- What might co-creation, participation, and making sense actually mean when we engage with other-than-humans?
- How can we understand and embody feral data particularly in the context of practice-based research that follows hopes for eco-social transformation?

We invite you, readers, to consider these questions when you watch the "Feral Fragments of Lonjsko polje" film, when you drift with our collective feral sensemaking experience, and perhaps even when you make your own feral fragments – whatever these may be in relation to your life and your practice.

ACKNOWLEDGEMENTS

Special thanks to The Lonjsko Polje Nature Park, Tradicije Čigoč, rivers Sava and Lonja, and all creatures of Lonjsko polje.

Lonjsko polje – always in flow, ever-changing, shapeshifting. Photo: Aleksanda Drecun

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collective imaginaries

Tonči Čerina, Vedran Kasap,
Niko Mihaljević, Ivica Mitrović,
Mia Roth and Ozana Ursić

Collective Imaginaries workshop was hosted by the Study Centre of the Zagreb Faculty of Architecture in Motovun, September 2023.

BRIEF

This workshop explored the pasts and futures of coexistence between humans, animals and nature, focusing on the symbolisms used to represent these relationships. They present a collective imaginarium embodied in beings and shapes communicating beyond their origin, legible on a subliminal level. The workshop posed the questions of how architecture, design and art can become tools for transforming the way people interact with nature, specifically which formal idioms facilitate this interaction. Can specific languages of objects facilitate communication and understanding of fragile equilibria of systems we belong to? How do collages of the existing and the imaginary interpret coexistence, and how do they contribute to the development of a new approach to the physical environment? The workshop aligned with the concepts of "presence", "ongoing and effective care that stays alert to many sorts of history".[01] Triggering the desire to gain this understanding comes through intervention and artistic interpretation, which communicates on levels of inherited collective memories and subconscious recognition.

Initiating discussion and thinking about the topic of the workshop, instead of concrete problems that need to be answered object-wise or project-wise, the students were presented with a series of associative art works of different architects, designers and artists: Doug Aitken's Migration series, Marcel Broodthaers' Interview with the Cat, Brötzmann and Bennink's Schwarzwaldfahrt, Casagrande and Rintala/Eggertson's Land(e)scape, Gusmão and Paiva's Papagaio, John Hejduk's Victims (Berlin memorial), Alan Hook's EquineEyes, Patricia Piccinini's Long Awaited, Ben Rivers' Origin of the Species, Schulz's Inclusion Model, Thomas Thwaties' Goatman, Pinar Yoldas' Petronephros, and local masquerade customs.

Collective imaginaries in Motovun.
Photo: Hrvoje Franjić

PROCESS AS OUTCOME

Bringing together a design and architecture group consisting of Croatian students, teachers, and guests, the workshop invited projects that combine traces of nature and culture and strive for a new approach in design practice. Shortly after the start of the workshop, it became evident that avoiding the imperative of the outcome, i.e. solutions by which we measure "progress", made room for the oh-so-needed "idle hours" in which it was possible to exchange intimate thoughts and experiences about the processes that we are part of, sharing them with other participants.

Volumes of the indistinct, hidden, sensed and unarticulated are trapped in our subconscious. In order to release them, it is necessary to create a space and time in which, relieved of the burden of delivery, we can reach new (or reestablish neglected) connections by communicating with other people, beings and objects. This sharing led to a number of different and unexpected approaches to the workshop theme: whether it was about embedding one's own personality in other beings, phenomena or plants, raising awareness of the known or simply erasing outdated canons and recognizing new ones, the participants

enabled new readings of our reality as the first step towards changing the way we interact with the world and symbolically represent these interactions.

The participants were instructed to change their roles from problem solvers to examiners of the essence of ubiquitous relationships. They were invited to reimagine relationships between the inanimate and living. The usual educational procedures: task/problem – project/solution, were replaced by an open process characterized by observation, intuition and empathy. By reaching inward, drawing from their own experience, memories, myths, intuition and imagination, the participants came up with tools and methods that re-established new imaginaries of nature-culture relationships.

Collective imaginaries in Motovun.
Photo: Ozana Ursić

REFLECTIONS

One of the goals was to make participants aware of the width of the the scope and agency of design and architectural practice, stressing the importance of stepping out of the imposed professional frameworks of the material, tangible and measurable. Crucial to this release

is engaging one's imagination, aligning to Alfred N. Whitehead's description in his essay on education: "Imagination is not to be divorced from the facts: it is a way of illuminating the facts. It works by eliciting the general principles which apply to the facts, as they exist, and then by an intellectual survey of alternative possibilities which are consistent with those principles. It enables us to construct an intellectual vision of a new world."[02]

Through questioning the human and non-human relationships, giving voice to invisible or neglected actors with whom we share the planet, in order for them to surface, and renouncing the "man-is-the-measure-of-all-things" perspective, the participants examined the processes of becoming-animal, becoming-earth and becoming-machine, intuitively realizing the idea of "post-anthropocentric posthumanism", as Rosi Braidotti describes it.[03]

Collective imaginaries discovered glitches in bonds with our environment, taking on the identity of neglected beings or natural phenomena, redefining rites and rituals stemming from elements no longer existent, giving voice to forms of guerilla resistance of plants, challenging relationships to our subconscious fears and triggers.

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ARTIFICIAL LANDSCAPES

In this work, the role of interiorized, highly stylized clips of nature is recognized as the key to establishing everyday escapism in the life of a contemporary individual. These extracts are no longer in any relationship with their real nature and fulfil their given limited role regardless of their context. Nature is reduced to a mere picture, a faded representation of the whole. The meaning and position of nature in the general environment is questioned, redefined, set free. Stepping backwards, treading the tracks towards the point when things went wrong.

Students:
Nikolina Meter and Sandi Terzić.

Artificial Landscapes presentation.
Photo: Mia Roth

"MYCORRI FIGHT THROUGH STRONG RESISTANCE"

Plants were stripped of their natural habitats in which they grew and bred, and communicated without interruption among themselves and with animals. Plants are reintroduced into these artificial environments, replanted and reshaped to enhance the human experience, reduced to this simplified role. Cutting roots, branches, pulling, pruning, limiting growth is an inevitable negation of their natural state during which we perceive them as quiet sufferers. This perception relies on the context of human measurement of time, our rhythms of life being the rule against which we consider change fast or slow. In parallel, plants slowly fight back to regain their natural reign. They raise concrete, penetrate roofs, crawl into cracks and turn walls into sand. A slow fight is happening below our feet, a fight we are unaware of. Plants are given agency as guerilla fighters. They unite and print leaflets calling for struggle and resistance. Humans are unaware of the slow yet steady progress towards reclaiming what was taken.

Students:
Dora Mihinjač and Klara Čopec.

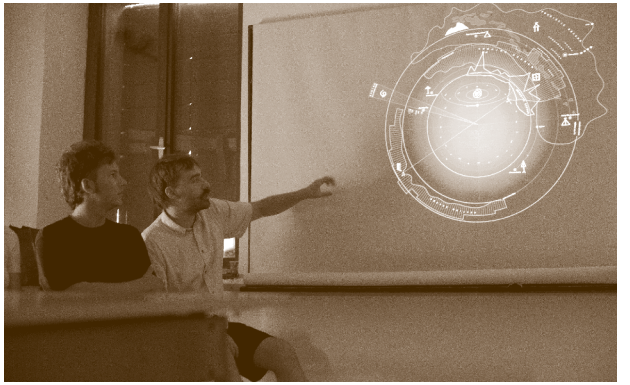
REHABILITATION TO BEGIN AFTER LIBERATION
PROMISES OF A NORMAL LIFE
MYCORRI FIGHT THROUGH STRONG RESISTANCE
REHABILITATION STARTING SOON

"Mycorri fight through strong resistance"

THE SUBNATURAL CALENDAR

Resettling legacy baggage is the first step in establishing a new reading of our environment, and this open proposal challenges the seasonal definitions and natural phenomena embodied in a calendar whose origins are rendered abstract, obsolete and removed from their sources. Starting with the analysis of one's relationship with nature in the context of a subnatural urban environment, the project proposes a new calendar using the same principles as the traditional calendar. This cyclical calendar maps the simple and everyday routines, elevating them to the level of seasons and rituals, and in that form highlights the absurdity of our everyday habits. With loosely defined seasons that overlap, the "new subnatural year" has periods of different densities, which are marked by ceremonies calling for a new way of communication. Derived from the form of old runes, new symbols emerge.

Students:
Nika Čerina, Helena Hlišć, Karmen Ivančić, Bartul Krivić and Fran Polan.



The Subnatural Calendar presentation.
Photo: Hrvoje Franjić

The Subnatural Calendar

RUPTA VIA

Is there a mechanism by which people can deal with feelings caused by wild natural disasters like floods, so that feeling can be intensified and in a certain way lead to the awe of nature as a force? Flooding is a claustrophobic phenomenon that reduces operating space, making us disoriented, insecure, and unstable. By evoking this feeling through a specific construct and linear movement, an attempt is made to achieve a spatial experience that leads to those elements, intensifying their experience. The project's speculative construction is conceived in the form of a long tunnel that is laid along the bank of a river (Sava). At one point the tunnel enters the river itself. The entrance to the tunnel is placed in the form of a triangle, which becomes the section, gradually reducing the geometry of the tunnel in two dimensions (width and height). The exit from the tunnel is narrow and one has to crawl out of it. An outgrowth (a sound installation in the form of a long tube that takes sound directly from the river and transmits it to the inside of the tunnel) is attached to the structure from the outside.

Students:
Lucija Nemet, Viktorija Paljug, Petra Pedišić and Luka Nera Sibila.

Rupta Via

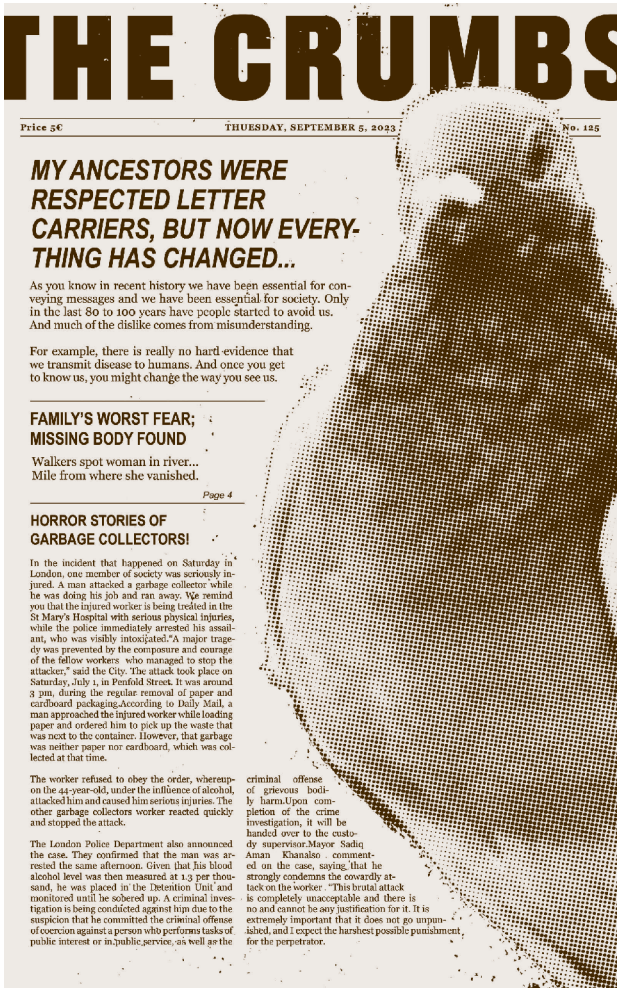
Rupta Via presentation. Photo: Hrvoje Franjić

THE CRUMBS

This project's primary objective was to explore methods for giving a voice to nature, which is frequently marginalized and disregarded. Inspired by the Croatian magazine "Ulična svjetiljka" ("Street-light"), which amplifies the voices of marginalized individuals, particularly the homeless, the project embarked on a creative endeavour to shift the narrative in favour of animals. By using parody, this approach involved giving voice to universally reviled animals by taking newspaper articles and reframing them. In this reinterpretation, the boundary between the human and non-human realms becomes blurred. Readers are encouraged to question their relationship with animals and nature as a whole, prompting a reconsideration of the article's focus and the identity of its central subject. By leveraging humour and satire, the aim was to stimulate critical reflection on the human-animal dynamic and challenge preconceived notions about the roles and perspectives of all beings in our shared world.

Students:
Stela Brkić, Alen Marković, Slavko Petek
and Eva Rezar.

The Crumbs presentation. Photo: Hrvoje Franjić


THE CRUMBS

Price 5€ THUESDAY, SEPTEMBER 5, 2023 No. 125

MY ANCESTORS WERE RESPECTED LETTER CARRIERS, BUT NOW EVERYTHING HAS CHANGED...

As you know in recent history we have been essential for conveying messages and we have been essential for society. Only in the last 80 to 100 years have people started to avoid us. And much of the dislike comes from misunderstanding.

For example, there is really no hard evidence that we transmit disease to humans. And once you get to know us, you might change the way you see us.

FAMILY'S WORST FEAR; MISSING BODY FOUND

Walkers spot woman in river... Mile from where she vanished.

Page 4

HORROR STORIES OF GARBAGE COLLECTORS!

In the incident that happened on Saturday in London, one member of society was seriously injured. A man attacked a garbage collector while he was doing his job and ran away. We remind you that the injured worker is being treated in the St Mary's Hospital with serious physical injuries, while the police immediately arrested his assailant, who was visibly intoxicated."A major tragedy was prevented by the composure and courage of the fellow workers who managed to stop the attacker," said the City. The attack took place on Saturday, July 1, in Penfold Street. It was around 3 pm, during the regular removal of paper and cardboard packaging.According to Daily Mail, a man approached the injured worker while loading paper and ordered him to pick up the waste that was next to the container. However, that garbage was neither paper nor cardboard, which was collected at that time.

The worker refused to obey the order, whereupon the 44-year-old, under the influence of alcohol, attacked him and caused him serious injuries. The other garbage collectors worker reacted quickly and stopped the attack.

The London Police Department also announced the case. They confirmed that the man was arrested the same afternoon. Given that his blood alcohol level was then measured at 1.3 per thousand, he was placed in the Detention Unit and monitored until he sobered up. A criminal investigation is being conducted against him due to the suspicion that he committed the criminal offense of coercion against a person who performs tasks of public interest or in public service, as well as the criminal offense of grievous bodily harm.Upon completion of the crime investigation, it will be handed over to the custody supervisor.Mayor Sadiq Aman Khanalso commented on the case, saying that he strongly condemns the cowardly attack on the worker. "This brutal attack is completely unacceptable and there is no and cannot be any justification for it. It is extremely important that it does not go unpunished, and I expect the harshest possible punishment for the perpetrator.

The Crumbs

adriatic melancholy of homo aquaticus

Ivica Mitrović

Exhibition “Homo Aquaticus: HABITAT ST21” at the Museum of Fine Arts in Split in October 2023 (by Oleg Šuran and Ivica Mitrović) inspired the workshop INTERAKCIJE 2023: Homo Aquaticus at the Arts Academy in Split.

Homo Aquaticus: HABITAT ST21 exhibition at the Musem of Fine Arts. Photo: Vicko Vidan

The Adriatic, as the northern arm of the Mediterranean, cut into the European continent, has always shared the turbulent history of the Mediterranean Sea. From the "cradle of European civilizations" and the prosperity of the emperors of ancient civilization to the difficult life of island farmers and shepherds, factory and port workers and workers in Mediterranean shipyards, to today's almost "slave" life of staff in "deluxe" tourist facilities (hotels, pensions, apartments, camps, rooms, holiday homes, marinas, restaurants, bars, nightclubs, tasting rooms, etc.). On the other hand, this European part of the Mediterranean is now being fetishized again, as it was once advertised by the Croatian National Tourist Board – "The Mediterranean as It Once Was".

Such a Mediterranean continues to be associated with places of colourful, sunny locals, from wrinkled island fishermen in dilapidated wooden boats to tattooed tanned retirees on local beaches from Split to Naples. These are places where time has stopped, places where life is completely devoid of continuous uncertainty and the stresses of the Western way of life, places where one lives in the present, where the future does not come, so there is no need to run from it. Places devoid of all the ongoing crises and disasters of the modern Mediterranean, from a series

of wars, continuous migrant suffering, extreme poverty, to galloping climate change. These places have become new media and tourist commodities, places that offer landscapes and people, as scenographies of mass consumption, places of artificial and fabricated identities. For the local population, they are places where the remaining active members of the community are feverishly trying to resist these new colonializations.

Split is one of those cities, perhaps the ultimate case study. A city that, after a period of aggressive deindustrialization, found itself in an even more aggressive apartmentization that is becoming the main source of income for its citizens. Large industrial complexes employing tens of thousands of workers have now been replaced by global hotel complexes. The population of the city has decreased drastically, and the places and communities that formed the identity and were a cohesive element of the city are disappearing with those who leave, taking away memories. Where there used to be post offices, libraries, cinemas and colleges, now there are bars, bistros, fast foods, hostels and hotels. Just as public amenities have disappeared, residential neighbourhoods are now disappearing, turning into apartment complexes.

Homo Aquaticus: HABITAT ST21 by Oleg Šuran and Ivica Mitrović.

The need to react, reflect on the possible implications of global climate, but also technological, economic and political futures in the local context of the Adriatic, away from European urban and technological centres, "from the edge of Europe", through the so-called "Mediterranean speculative approach"– resulted in a series of projects dealing with current global trends.[01] Focusing on a range of global phenomena, from the "smart cities", i.e. privacy in the new economies of such cities; the reliability of social networks and rating systems in the context of tourism-based economies; the growing phenomenon of automation at the local level; climate change and the future of the sea; to the resilience of local self-organizing communities. Through these projects, we have stimulated discussion within the local community, among experts and "ordinary" citizens, about a whole range of possible future scenarios. Our wish was also to inspire hope in the possibilities of action of individuals and communities who in this part of Europe and the Mediterranean have long known and managed to find a way to resist (or hack) imposed (dystopian) scenarios.

Although these works may lack concrete actions outside the context of the projects, they are practices that, in the participatory process between designers and experts, through imagination, but also the design of "real speculations", opened up potential models of the future that can be built on the foundations of community resilience, i.e. on cooperation, not competition. The intention was to offer possible alternative scenarios to the anticipated dystopian climate futures, scenarios that could prepare us for such post-apocalyptic futures, as well as to try to offer methods and tools that could help individuals and the community rebuild their lives after a possible disaster.

As a follow-up to the last research, exhibited at the Museum of Fine Arts in 2021[02], which dealt with local communities, i.e. their resilience, here, inspired by Jacques Cousteau's visit to Split in 1977, we reflect the present of a city torn between unplanned tourism and galloping climate change, again through speculation and in cooperation with experts from the Institute of Oceanography and Fisheries and the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split.

Throughout human history, the sea and its depths have always been places of new challenges, discovery and colonization. Their mysteriousness generated countless myths, which are also present in modern culture. In the time of the "space age" of the second half of the 20th century, the sea somewhat disappears from focus. The mythical hero of high modernism, the French sea explorer Jacques Cousteau, brings the sea back into focus. In his speculation created in the 1960s, he presented "Homo aquaticus", a man who, through scientific and technological extensions developed over the next 50 years, could, as his distant ancestors, live and survive in the sea again. His vision relied on surgical interventions on human respiratory systems that would allow humans to stay under the sea for a longer period of time, i.e. that would bring humans closer to sea creatures. Cousteau's vision, based on the modernist narrative of man taming "wild" nature, resulted in the construction of experimental underwater habitats in which divers resided for several days.

Jacques Cousteau in Split, 1977.
Photo from a private collection.

As well as a number of other grandiose high-tech projects, this one was presented at the 1964 World's Fair, and resulted in a revolutionary development of diving equipment, scientific breakthroughs regarding the possibilities of human survival in an extreme environment, and a series of insights into life under the sea. It is not possible to ignore the scientific importance, but also the impact of these discoveries on popular culture, which changed the understanding of the origin of life and helped in the exploration of space, and which was partly guided by the human "romantic", exploratory curiosity. However, Cousteau's speculation is also an archetypal example of an anthropocentric relationship with nature, in which technology played a primary role in achieving human supremacy. It focuses on life with the sea, but above all on the possession of sea depths, i.e. submarine resources that would be exploited by colonies of submarine workers *(Homo aquaticae).* A worldview in which the sea is not an intactness to be preserved and a force of nature to be respected, but a world to be "conquered" and exploited.

Such utopian visions of life in the marine (as well as space) depths as endless and inexhaustible expanses open to human colonialization, as early as the late 70s and especially in the 80s of the last century, faced with a change in the environment of the planet, lack of resources and indications of climate change that are coming, reflect a new imperative through their next versions – the pursuit of salvation and survival of the human species. Reflected many times in popular culture, for example through literature (Kurt Vonnegut's 1985 "Galapagos") and film ("The Spy Who Loved Me" with Roger Moore from 1977, "Waterworld" with Kevin Costner from 1995, or the post-modern criticism of Wes Anderson and Noah Baumbach in the iconic "The Life Aquatic with Steve Zissou" from 2004). The history of such speculations offers insight into the human relationship with the ocean and marine environment, but also creates hope for transformative activities in the upcoming man-made disasters.

Throughout the centuries, seas and oceans have provided and continue to provide resources, as a source of food, energy, minerals, jobs, goods and services, but at the same time they have been places of trade routes, intercultural exchanges and migration. In the modern world, they are the backbone of many industries and world economies, while at the same time they absorb greenhouse gases, create oxygen and store large amounts of carbon monoxide, playing a significant role in mitigating climate change. Today, the interest in seas and oceans is growing again. Corporations are busily initiating mining activities in the deep sea in order to obtain the necessary minerals and metals for the increasing demand and production of electronic devices and electric vehicles. For now, the growing exploitation of the oceans, without strategies and regulations, is a new challenge for the planet.

As critical reference to Jacques Cousteau's romanticized high-modern visions of the future and life under the sea, which have become part of our popular culture, i.e. Précontinent submarine constructions, the project "Homo Aquaticus: HABITAT ST21" focuses on potential utopian undersea dwellings and communities of the near future, as well as on local, micro models of resilience. The project speculates on the possible life of man in the underwater, extended living environment, inspired by the idea of the "sea man". Starting from the described fetishization of the Mediterranean way of life and facing future challenges through multidisciplinarity, we deal with possible local, micro models of resilience, from a specific Mediterranean perspective. By speculating on "man from the seaside/the sea" and creating new communities, we critically reflect anthropocentric visions of the future and life under the sea.

The speculative scenario reflects the present of a city that, in transition from the once industrial city of production and creation, through an explosion of unexpected and unplanned tourism, has completely turned to service activities. The city, whose urban and populated neighbourhoods have been transformed into apartment dormitories of disorganized tourism, which are the only or additional economic income for its citizens, pressured by omnipresent and growing climate changes, extremely hot and dry summer –has fallen apart communally and infrastructurally. With apartmentization, gentrification and globalized

conditions that we witness pendently completed the with a central ventilation and you will have to set aside four portant factors in the story of

SPLIT'S DIŠPET IS MOVING UNDER THE SEA

Last attempt at RESISTANCE?

The reality in which the citizens of Split and its surroundings live has long ceased to be news; we've grown accustomed to the continuous rise in temperature, both air and sea, to extreme climatic situations, to touristification, seasonality and gentrification, and, finally, to the devastating fact that there is simply no place in contemporary Split for the local population that refuses to adapt to the reality that requires servility, and in turn offers only marginalization that becomes more obvious every day.

Floating oasis at the foot of Marjan

However, something seems to be brewing; news has reached our newsroom from the last resistance zone in Split, Špinut ports, in which we are already accustomed to the scenes of anchored boats that the citizens of Split first converted into dormitories and then into functional, floating living spaces in which they stay during the tourist season, when they leave their living spaces to tourists. The Špinut floating dwellings have undergone a transformation in the last two decades, so today we are witnessing innovative design solutions that make these permanently anchored boats suitable for year-round stays. However, the question is how long will such floating dwellings be able to withstand increasingly difficult and unstable weather conditions, more frequent storm storms, floods and wind gusts?

Cooperation between the civic initiative and the profession

Of course, we are not the first to ask these necessary questions. Owners and users of boats and floating Špinut dwellings have been thinking about them for some time. Organized in the Deep Association, at the beginning of the year they established a partnership with the only remaining successful private plant in the Split shipyard, specializing in high-tech ship elements, as well as with designers from the Department of Shipbuilding of the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split. With the support of the Split Development Agency (RaST), the project team has successfully applied for funds from the European Union, which has been encouraging the implementation of projects focused on the sea as a resource in recent years. The "HABITAT ST21" project received high marks, the requested funds were fully approved, and the works in the Špinut Bay should begin at the end of the summer.

What are underwater habitats?

The innovative idea behind the "HABITAT ST21" project came from engineers from shipyard plants who, inspired by this port floating quarter, designed underwater habitats, new places for seasonal housing of the local population. A group of engineers, in collaboration with a local diving club, has located several convenient locations to accommodate underwater living spaces suitable for families of up to four.
The habitat community will contain six to twelve units, nestled around the underlying infrastructure, and each habitat will be fully equipped to enable life during the summer months of the most intense tourist siege. These submarine housing units were inspired by the former serial production of fiberglass boats that came in basic equipment, so the users will also be able to adapt and upgrade the basic modules of the Špinut habitats according to their own needs and in accordance with their knowledge, skills and capabilities, at optimal costs.

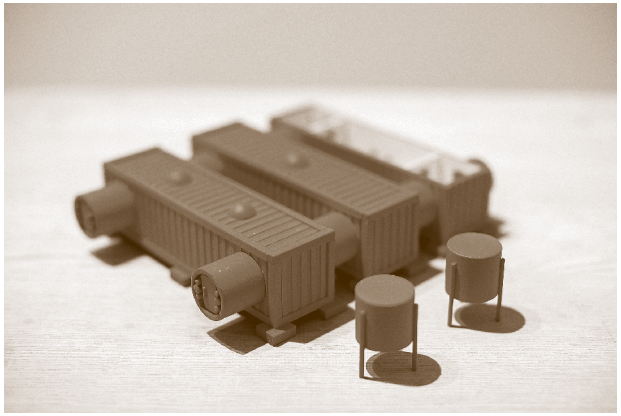
An alternative worthy of life above sea level?

How to resist the touristification that has very much eroded the "Mediterranean Flower"? How do you ensure living conditions in times of increasing climate extremes? Is there a solution to the long-standing problem of the lack of adequate and accessible living space for the local population, both during the increasingly long tourist season and during the remaining few months when citizens can, at least seemingly, take a breath? How to keep the semblance of normalcy in a city swallowed by touristification and gentrification?
Citizens and professionals gathered around the "HABITAT ST21" project have shown that civil resistance from the Špinut harbour must enter a new, structured phase of action to try to answer these burning questions, while not forgetting the initial fuel that made this harbour an oasis; the solidarity and reliance on the sea and the seabed as, unfortunately, the only area that is still considered a public area from which, at least for now, tourists will not evict us. It remains to be seen whether this type of settlement will work in practice, as well as whether the local population will see in it an alternative worthy of life above the sea surface. One thing is certain, despite all the changes that are increasingly corrosive to the image of the famous Split from year to year, resistance and the ability to adapt to extreme situations still live in it. ● T. MIJAN

Frane Dumanić, voditelj projekta

Homo Aquaticus: HABITAT ST21,
speculative newspapers by Kristina Tešija.

tourist offer, the city centre is not only without inhabitants, but almost without any trace of local identity. This speculation satirizes the present in which a large number of residents rent out their apartments in the summer as private accommodation (studio apartments, rooms, hostels, etc.), while spending the summer in vacation homes, country houses, garages, with parents or relatives in crowded apartments, or on their boats in Split's communal marinas. The speculative future goes a step further, anticipating newly formed floating settlements in harbours and marinas that will turn into first submarine settlements in the near future.



Homo Aquaticus: HABITAT ST21 by Oleg Šuran and Ivica Mitrović. Photo: Vicko Vidan

The bays and harbours in Split, as well as in other parts of the eastern Adriatic coast, have always been places of socialization and collective practices, from the beginning of swimming as a civic recreation (but also leisure), through groups that gathered on the city beaches, the so-called "Split Republics" in the time before the First World War, through the formation of sports clubs before the Second World War, to communal ports that were built through self-contributions and the work of the local community during the second half of the 20th century.

Such places abound in vernacular design solutions full of various modifications, DIY upgrades and ingenious extensions. These places have created micro resilience communities by developing and preserving these skills over the years, which have developed new ways of bypassing laws and rules, adapting imposed systems to their own needs and way of life.

In order to test feasibility and bring speculation closer to reality, through a series of iterative and participatory meetings, and in cooperation with the Department of Naval Architecture of the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split and mechanical engineers, we have developed conceptual drawings of the community of habitats of the future, which could be launched into the underwater of the Split communal port, in the bay on the north side of the Split peninsula. In cooperation with experts from the Institute of Oceanography and Fisheries, we discussed our relationship with the environment, nature, the possibilities of coexistence instead of the exploitation of the depths of the sea, stepping away from an anthropocentric approach to the sea. The calculations on the possible use of nutritious marine plankton biomass in this specific location, in a way that would achieve sustainability, conceptualized a habitat module that would collect biomass to expand the diet of the inhabitants of the settlement. Models, visual materials, supported by artificial visions of such futures, generated through AI tools (which refer to the generic, machine representation of the aesthetics of the future), as well as narrative scenarios and a cinematic "mondo" soundtrack, brings the utopian atmosphere of such futures.

Homo Aquaticus: HABITAT ST21 by Oleg Šuran and Ivica Mitrović. Photo: Vicko Vidan

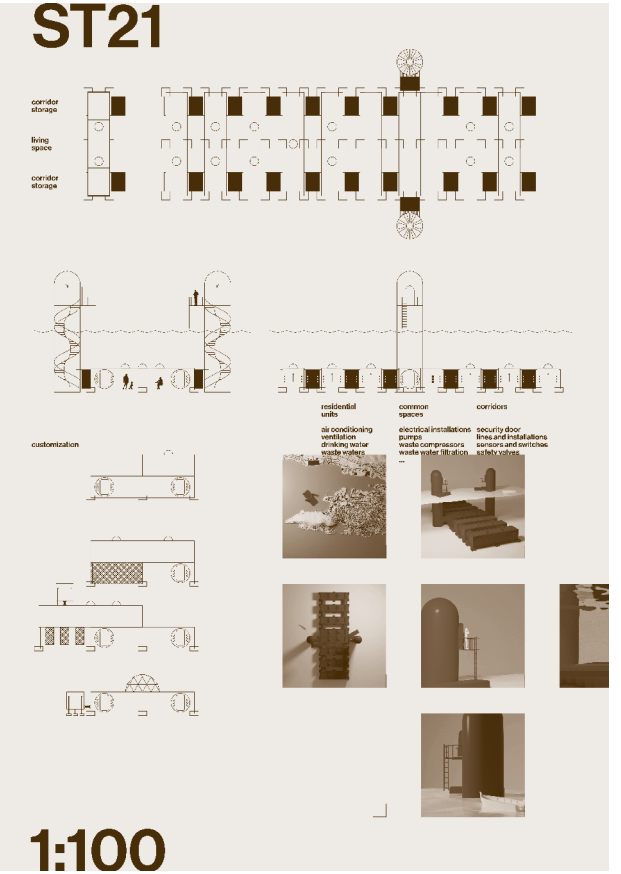
Throughout history, we have witnessed a whole range of utopian projects, from prototypes of self-sufficient spaceships, submarines, alien colonies to high-tech artificial ecosystems that eventually ended up as elitist oases, disappearing in new inequalities created within such closed and seemingly autonomous environments. The "Homo Aquaticus: HABITAT ST21" shares with such projects an experimental character and a willingness to radically transform ways of life, but at the same time is based on openness, participation and locality. By speculating on the potential departure of the inhabitants of the city to the sea, we are also speculating on the possible creation of a new community, a community that would retain part of the almost lost identity of the city, but also build a new, specific, local identity of the future. This community is not independent, it is not self-sufficient, it is seasonal, exists during the summer, it is connected to the real world, to the global capitalist economic system in which we live. It has no intention of separating and isolating itself, it is actually just a necessary form of local resilience, an attempt to survive within global constellations that reflect on this part of the world, the Adriatic coast.

The project raises several fundamental questions about the possibilities and ways of retaining local identity

and diversity in the context of recent and upcoming global crises and disasters. First of all, the question of the possibilities of building new places of community resilience, not as places of new utopian beginnings, but as places of transition from the present to new and different societies, communities of hope and communities of the future. A number of specific questions were also imposed, from those related to the daily diet of residents, to questions about possible infrastructure systems, to what legal and regulatory concepts of such a collective practice would allow these areas to be treated exclusively as a common good. These issues reflect the current global discussions on the ownership of the seabed, questioning the ways of regulating these new areas of human interest for the purpose of preventing new privatizations and further uncontrolled exploitation.

Through the process of research, speculation and design, it was important to us, as the residents of a city "devoured" by tourism and threatened by accelerated climate change, to personally understand and analyse the system in which we live and the processes that occur within it. With the aim of transferring the methods, tools and techniques we understand, develop and use, to the local community, as a contribution to possible transformative changes in society.

As we look at models, blueprints and "photos", as we read speculative newspapers and listen to the soundtrack of the underwater world, we see a new utopia in front of us, and perhaps we see traces of a new hope for the city, a place where the old identities intertwine and new identities of the city are built. Paradoxically, such a utopia is at the same time a complete dystopia, an image of the collapse of the city under touristification and climate change. We see a community that has had the privilege of living in one of the "Pearls of the Mediterranean" or, as the people of Split themselves used to call it, in the "Mediterranean Flower", which seeks its last salvation in claustrophobic underwater habitats and their dark corridors.



Homo Aquaticus: HABITAT ST21 by Oleg Šuran and Ivica Mitrović.

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What is hidden in the "Deep"?

A quarter of a century ago, citizens of Split showed that there is a will, when they filled the last oasis of Split's resistance, the Špinut ports, with boats and floating dwellings with which they answered the burning questions that hung over Split in guerrilla style. Joining in a common goal, solidarity and sharing of responsibilities, they found a solution to their own housing issue during the increasingly long and chaotic tourist seasons.

Already with the first dormboats, the Špinut ports have become places for practicing resistance and actively responding to the increasingly obvious consequences of expanding tourism, the maximum prolongation of the tourist season, as well as climate change and extreme weather conditions that we witness on a daily basis. However, it turned out that these solutions are only temporary and that the time has come to deal with the inadequacy of floating dwellings in worsening weather conditions.

Potential of new settlement

A group of shipyard engineers who saw the potential of building a new settlement, an underwater habitat that would adequately answer the question of the lack of available housing for the local population that refuses to leave the Split area in flight from expanding tourism, showed that there is knowledge.
And that there is a way, the citizens and the profession have proven jointly, by partnering on the project "HABITAT ST21", thanks to which the Špinut Bay today hosts the first submarine settlement in Split.

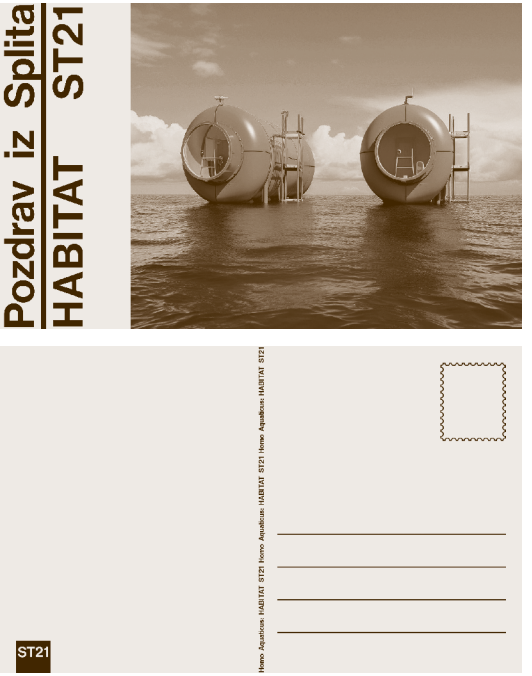
The Špinut oasis today

What does all of the above look like in practice? Today, five years after the construction of the first underwater habitats, about twenty families, whose members independently completed the conceptual designs of the engineers of the missing Split shipyard, are living in the water district, aptly named the "DEEP", converting transport containers into comfortable underwater dwellings.
The foundations of the "DEEP" are two vertical steel pylons that serve as the entrance and exit to the entire complex of habitats that are interconnected by short steel corridors. The habitats, a total of twelve, are steel structures, containers of reinforced formwork with double doors and added openings and are located at a depth of six meters and anchored using four concrete blocks for the sea bottom.
The settlement is equipped with a central ventilation and energy system, and in summer, the habitats partly use the sea temperature for cooling. In cooperation with the Institute of Oceanography and Fisheries, a portable module for the processing of sea biomass into energy/organic resources was built, while, thanks to the cooperation with the Permaculture Dalmatia association, each habitat was also equipped with a handy marine "flower bed" for the cultivation of several edible seaweed species, food increasingly consumed by the increasing number of the Špinut Bay dwellers.
This submarine settlement also contains common areas for washing clothes and growing seafood, areas that remind that this venture of resistance would be unthinkable without the concept of a community.
And the joint action, from which everything started, is also reflected in the daily organization of life in the "DEEP", whose inhabitants organized themselves into a cooperative that allows them to easily organize legal regulations, share the costs of maintaining modules and jointly care for energy and food resources. Five years of experience has also shown the necessity of focusing on raising the quality of undersea life and building handy undersea infrastructure.

A habitat for everyone's wallet?

However, one of the most important factors in the story of such dwellings is certainly the fact that, thanks to the typical performance and production optimization, they are affordable to the local population, so you will have to set aside four average annual salaries for the ownership of such a living space. For the local population, which has been suffering the catastrophic effects of Split's tourist attractiveness for decades, living on the seabed could be an attractive and cost-effective investment.
Although, as usual, only time will show how much the local population is ready for such a dive into the depths, one thing is certainly clear now: moving to the underwater world primarily provides the local population with a long-needed respite from touristification, seasonality, gentrification... of all the ills that have made Split a city that is constantly on the verge of infrastructural and communal chaos. It really does seem to be easier to breathe in the "DEEP"... ● K. ŠILOVIĆ

Homo Aquaticus: HABITAT ST21,
speculative newspapers by Kristina Tešija.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Homo Aquaticus: HABITAT ST21 by Oleg Šuran and Ivica Mitrović.

Musem of Fine Arts, Split, 5/10 – 31/10/2023
Ivica Mitrović & Oleg Šuran

Production: Arts Academy, University of Split
Sound: Niko Mihaljević / Soft Temple II
Speculative newspapers: Kristina Tešija
Collaborators: Department of Naval Architecture (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture) and Mladen Šolić (Institute of Oceanography and Fisheries)

Funded by the Ministry of Culture and Media of the Republic of Croatia and the City of Split.

homo aquaticus

Valentin Graillat and Olivier Troff

Homo Aquaticus workshop was hosted by the Arts Academy, University of Split, as a part of the INTERAKCIJE 2023 event in October 2023.

BRIEF

Seas and oceans can be viewed as the new frontier territories of the 21st century. For many years, they have been perceived as hard-to-reach and still largely uncharted areas, the discovery of which relies largely on technological advances. Simultaneously, coasts of the Adriatic and Mediterranean seas have been increasingly fetishised as a manifestation of a so-called "everlasting" way of life. This is mainly based on images triggering desire for seafood and crafts, astonishing seabeds, antique heritage and, of course, for landscapes. They are all oriented towards developing mass tourism.

Homo Aquaticus in Split. Photo: Ivica Mitrović

Technology and fetishisation, however, are the two sides of a same coin called design. On one hand, the discipline communicates, exhibits, brands cities or regions (place-branding) and, of course, develops artefacts related to the sea. On the other hand, the discipline builds, integrates, or adapts systems that give constraints to the designers and inform the design of the artefact. According to Albert Borgmann and the "device paradigm"[01], it can be said that systems integrate infrastructures, select

resources, and are based on a specific geography. They are also impacted by political choices, as well as being related to people who have their own cultures and values.

Within a community perspective, investigating a system and the artefacts related to it means tracing the materiality of that system. In other words, systems and the landscape partially overlap. The landscape can be understood as a system of "interrelated spaces made by people, on the surface of the Earth, to fit the needs of a community," according to John Brinckerhoff Jackson.[02] From the regional scale to the scale of architecture and products, local geography is the place where infrastructures can be observed, resources traced, people portrayed, tools and techniques identified.

Such a framework could be promising regarding aquatic landscape issues – especially regarding those related to mass tourism in Split. Tracing the tangibility of the relationship between design artefacts ↔ systems is a way, for designers, to access how local communities experience their environment. Which means the vernacular, as Jackson called it, towards practices investigating community-based processes, questioning the balance between low-tech and high-tech, promoting bespoke making, as well as the renewal of local values and material culture.

Homo Aquaticus in Split. Photo: Ivica Mitrović

PROCESS

In order to tackle the issue of sea and human relations, we suggest a methodology that goes back and forth from: design artefacts ↔ landscape.

Such methodology would orient the design process to constantly evaluate ideation in regard to the materiality of systems. The goal was to ask the following questions during the design process: How to understand designed artefacts related to the sea in the lens of space? How to understand aquatic space in the lens of designed artefacts? What kind of relationships does this reveal or generate? In what ways design could address questions considering climate change and other related crises?

A series of lectures and presentations were organised to inform the views of participants. They included lectures by the Croatian pavilion curators Mia Roth & Tonči Čerina, social science researcher from Naples Gennaro Ascione and marine biologist Mladen Šolić, critical city tour of Split by sociologist Darija Ivošević and the "Homo Aquaticus: HABITAT ST21" exhibition visit at the Split Museum of Fine Arts by Ivica Mitrović and Oleg Šuran.

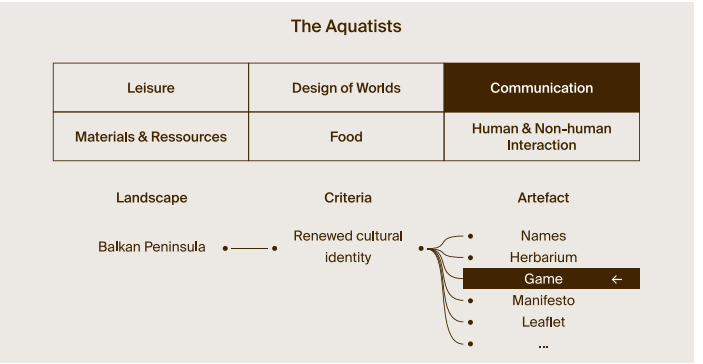
Homo Aquaticus in Split. Photo: Jasminka Babić

The workshop gathered 23 participants coming from seven European countries – mainly including MA students and young practitioners. Four groups composed of four to nine people were formed, and each group was invited to choose from one of six topics, which would help to both orientate the investigations and the design process.

Leisure	Design of Worlds	Communication
Materials & Ressources	Food	Human & Non-human Interaction

Workshop topics

To help guide their ideation process, the groups were invited to play a double-entry game, which consists of linking an artefact to its landscape, and vice versa, by choosing what they thought would be a relevant axis of problematisation (cultural, political, climatic). In the following example, "The Aquatists" group first focused on a water ball game called "Picigin" originating from Split. They reflected upon how such a game could be played in the entire region and adapted regarding the relationship people have with local bodies of water (rivers, lakes, coasts, seas). Eventually, they extended their reflection to a wider system of artefacts concerned with the utopian idea of local and regional identity.



Process by Valentin Graillat and Olivier Troff.

OUTCOMES

Of the six tracks proposed, the majority of the groups focused on the complex preservation and re-invention of landscape heritage and identity, with a strong shared interest in the consequences and impact of mass tourism and climate change on Split's territory. A first group of the participants, with backgrounds in architecture and visual communication, spontaneously approached the brief from a landscape perspective (cruise ship ports, old town), gradually narrowing their attention to the creation of specific scenarios, tools, and artefacts (local events, production devices, ancient crops). Rest of the participants were more interested in initiating their projects by observing local resources or traditions. After that, they started to open up their research to a wider scale (broader region, coast & seabed), and embrace the broader system related to them.

Process by Valentin Graillat and Olivier Troff.

When the "HRSPU" group focused on the material design of port infrastructures adapted to a more ethical and sustainable tourism in Split, for instance, "The Aquatists" group instead designed a renewed immaterial culture focusing on the regional landscape. At the junction of these two material/immaterial perspectives, the work of the "Splitting Split" group was entirely based on the use of a diagram that allows us to speculate on the evolution of antique heritage and the city in the near future, according to the macro-economic and cultural choices that the city will take. Eventually, with a more focused approach, the

"Redikul" project proposed a set of artefacts, tools and methods that articulate precisely identified coastal areas in local geography, and orient bodies and gestures towards the use of a new algae for food consumption.

REFLECTIONS

Regarding the relationship between artefacts/systems and landscapes, design and landscape design seem to have a lot to share despite their divergent methods and scale of intervention. As a consequence, the brief is a way to explore how to produce knowledge and landscape perspectives that are useful for designers. It first allows the exploration of the materiality of existing systems ↔ artefacts, as well as it gives the opportunity for participants to precisely evaluate the scales and modalities of intervention for their projects.

As the workshop was condensed into less than four days, reflecting upon landscapes was more of a conceptual exercise for participants than a proper survey. The option of starting the workshop with a more local or global approach enabled participants to mobilise their own design skills and to redefine and re-constrain, in their own terms, the complexity of the aquatic space. In that way, each project initiates, at the least, a unique questioning and non-conventional understanding of the material framework that structures Split's landscape. We like to think that experiencing such a method during longer workshops could be helpful for an in-depth landscape evaluation.

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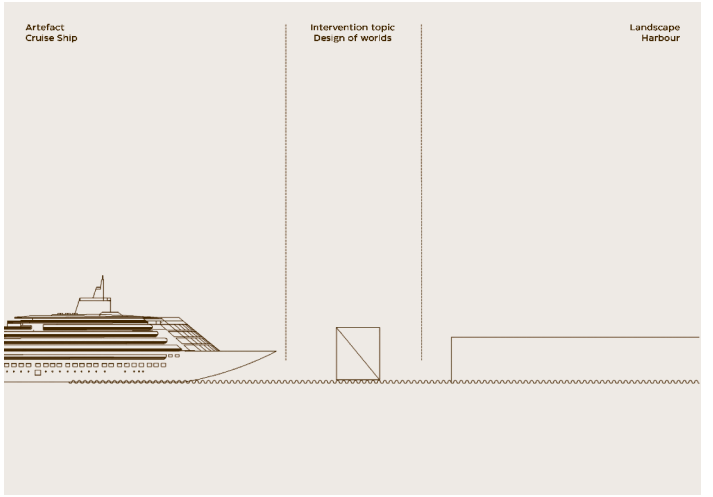
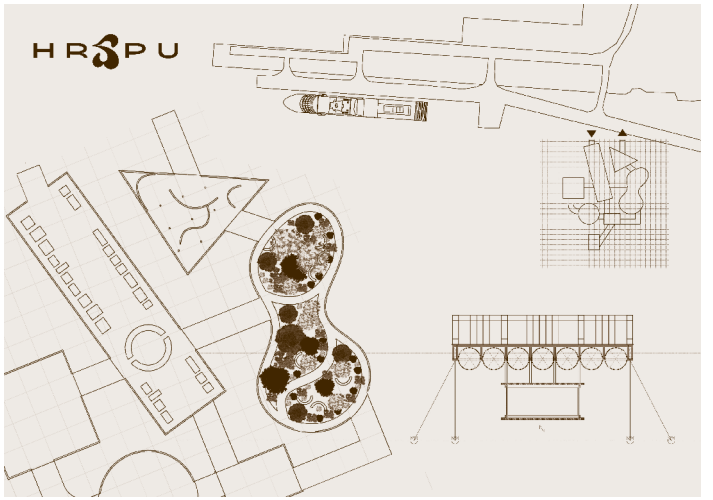
HRSPU

The HRSPU project aims to anticipate cruise tourism in Split, while celebrating the city's rich heritage. It features floating pavilions dedicated to different eras of the town's existence. Pavilions enable visitors and tourists to discover Split's culture in an immersive way, while limiting the pressure on the city's infrastructure. The project also includes an educational dimension, encouraging curiosity about Split's heritage and supporting local craftsmanship. Pavilions each offer a different educational experience: from witnessing the production and harvesting of resources, relaxation in a floating park, to curved walls with VR-like projections displaying the city's industrial past. It even extends its impact underwater, enriching marine life and resources. HRSPU promotes mindful tourism and can help regulate tourism in Split during the visiting season.

Team:
Ana Ivanović, Bansi Patel, Petter Habostad and Stefan Raičević.





HRSPU

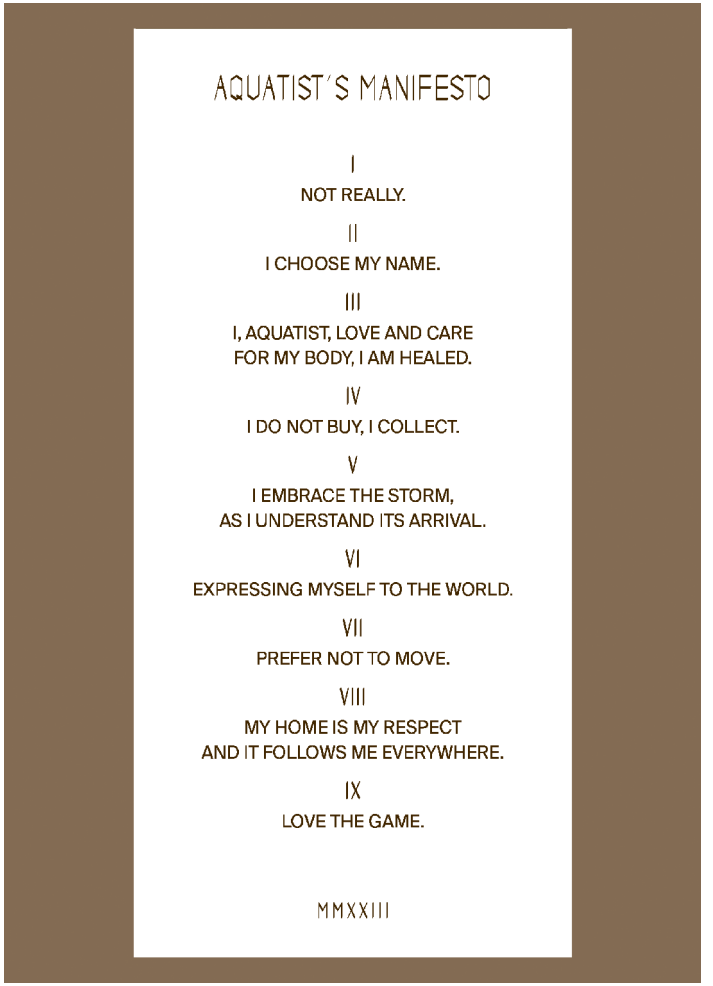
THE AQUATISTS

This project offers a symbolic reinterpretation of the Balkan peninsula identity in the form of a new cultural utopia. The Aquatist can be interpreted as a reversal of the ideal of modern, dominant, capitalist man synthesised by the renowned magazine “The Economist”. Poetic and polyphonic, The Aquatist project portrays this new identity in its many facets, both material and immaterial, from home to medicine, from games to arts. The graphic design project related to those reflections is a set of nine laminated cards. The cards reflect what that new identity has become in a hundred years. They could be given to newcomers to provide easier access to the cultural complexity of the region.

For that special occasion, The Aquatists will write the following manifesto.

Team:

Segor Garber, Tina Dernovšek, Katarina Stanojlović, Žiga Vavričuk, Julija Radosavljević, Dejana Ivošević, Katarina Popović, Miloš Ćosović and Isidora Nikolić.



The Aquatists

SPLITTING SPLIT

In this project, we split the future of the city of Split into four possible scenarios for the year 2050. They all explore how the cityscape, and the Docletian palace, at its centre in particular, would evolve regarding two of the main uncertainties affecting the city's lifestyle. The first one is whether the city will shift its economic activity to manufacturing, or if it will keep on relying on the service economy. With the second uncertainty, we explore if locals will engage or isolate from either tourists or future migrants. The resulting scenarios are: "Segregated shipmakers town" in which Split's naval industry becomes strong thanks to new housing at the sea; the "Neo-Yugoplastika Era" in which Split rebuilds its plastic industry using bioplastics and cooperative businesses; the "Mediterranean knowledge hub" in which the palace becomes a residence for the exchange of knowledge among coastal communities; and finally, the "Decadent touristic theme park" representing a future in which Split keeps pushing forward the intensive tourism model.

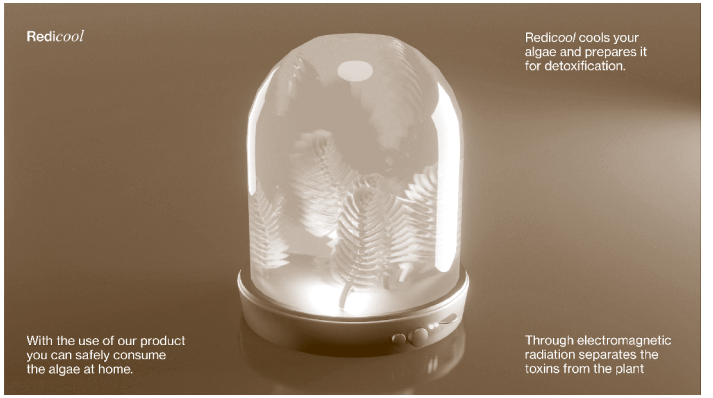
Team:
Tico Fuentes, Jelena Ivančević, Iva Žmirak, Anže Zajc and Leticia Fernández Alonso.

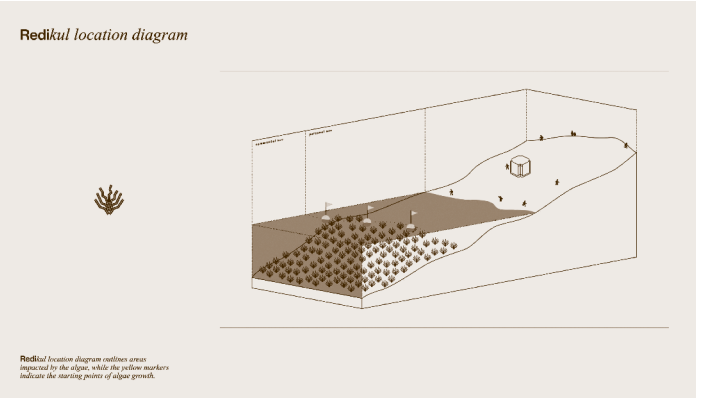
Splitting Split

REDIKUL/REDICOOL

The project idea arises from the question: How can we make humans producers, not just consumers of resources? For many years, the Mediterranean region has been plagued by a toxic algae *(Caulerpa taxifolia).* Scientists have attempted to develop a system for separating toxic materials from the algae. These experiments have proven successful. Our project is speculation on the possibility of developing a system for separating toxic materials from the algae to transform it into functional food, with the goal of shifting people away from their consumer role. The system consists of two parts: (1) an apparatus that initially preserves the algae at the right temperature and then, through the use of electromagnetic waves, generates the temperature needed to melt the toxic elements, and (2) spatial, site-specific signalling and education about toxic algae and their conversion into non-toxic, fully functional food.

Team:
Eva Popit, Magdalena Štibohar, Urban Šelj and Nia Gombač.


Redicool
Redicool cools your algae and prepares it for detoxification.
With the use of our product you can safely consume the algae at home.
Through electromagnetic radiation separates the toxins from the plant


Redikul location diagram
Redikul location diagram outlines areas impacted by the algae, while the yellow markers indicate the starting points of algae growth.

Redikul/Redicool

‘transition is a very useful word because we can ask what we’re transitioning from (a problematic state) and towards (a preferable state), and then develop the mechanisms, the movements, the behaviours that get us to that second state.’

— james auger

Excerpts from the opening discussion with James Auger (ENS Paris Saclay), Harriet Harriss (Pratt Institute, New York), and Martín Ávila (Konstfack, Stockholm), moderated by Ivica Mitrović (Arts Academy, Split) initiating the discursive program of the Croatian pavilion at the 18th International Architecture Exhibition – La Biennale di Venezia, in Venice, May 2023.

‘a key question to think about regarding the concept of alter-natives is to understand form as information. so if you think of form as information, you are asking “who is this informing?”, “about what?”, “who benefits from this?”, and paying attention to how something is participating in the lives of multiple species.’

— martin ávila

‘we can play a very powerful role in enabling and empowering life on this planet, even though humans might not be among the species that survive the climate collapse. this is not as problematic as it seems. creating life-sustaining architecture for lives other than our own is the epitome of an architectural legacy.’

— harriet harriss

‘I really think that design has to diversify to really live up to what we’re talking about. to break away from the monocultures of the same design responses in all places. I don’t think that that is radical. to me, in a sense, there’s an element of change that gives hope.’

— martin ávila

‘so this is where practice becomes critical – the doing (of design) – creating new mechanisms, showing people how we might transition to these alternative worlds (as described by ursula k. le guin)[01] through small and tangible steps. let’s make those small steps and see where that leads into in longer term future(s).’

— james auger

01 Curry, A. (Director). (2018). Worlds of Ursula K. Le Guin [Film]. https:/worldsofukl.com

APPENDIX

Martín Ávila is a designer, researcher, and Professor of Design at Konstfack, the University of Arts, Crafts and Design in Stockholm, Sweden, where he is artistic leader for Design and responsible for the MA Design Ecologies. His PhD work ("Devices. On Hospitality, Hostility and Design"), was awarded the 2012 prize for design research by The Swedish Faculty for Design Research and Research Education. His postdoctoral project "Symbiotic tactics" (2013–2016) has been the first of its kind to be financed by the Swedish Research Council. Martin's research is design-driven and addresses tensions in interspecies cohabitation. He is currently working on a collaborative project entitled "Material Cultures for Interspecies Cohabitation", also financed by the Swedish Research Council (2023–2026). His latest book "Designing for Interdependence: A Poetics of Relating" was published by Bloomsbury in October 2022.

James Auger is the director of the department of design at the École normale supérieure Paris-Saclay (ENS) and co-director of the Centre de Recherche en Design, a laboratory jointly run by ENS and ENSCI Les Ateliers. His practice-based design research examines the social, cultural and personal impacts of technology and the products that exist as a result of its development and application. Running parallel to his academic work, James is a partner in the speculative design practice Auger-Loizeau, a collaboration founded in 2000. Auger-Loizeau projects have been published and exhibited internationally, including MoMA, New York; 21_21, Tokyo; The Science Museum, London; The National Museum of China, Beijing and Ars Electronica, Linz. Their work is in the permanent collection at MoMA. James is co-author of Crap Futures, a blog he writes with Julian Hanna on subjects relating to design, futures, innovation, politics and technology.

M Buonincontri is a communication designer and writer based in Milan. They have obtained an MA in Art writing from Sandberg Instituut and they have been part of the research group Softcore Reading and facilitating PUB, a platform for experimental publishing. Informed by queer discourses, their practice explores the intersection between language and the body with a focus on writing, readership and the many layers of reading a text. Currently, they are collaborating as a teaching assistant with the Politecnico di Milano.

Sigrid Bürstmayr, Mag. (FH), M.A., is an exhibition designer and teaches at the Institute of Design and Communication at the FH JOANNEUM in Graz, Austria, as well at the Alpen Adria University Klagenfurt. Her professional interests and skills include product management, exhibition design and sustainable design. As in any other discipline, she considers design to have a responsibility to act sustainably — that is, in a way that makes ecological, social and economic sense. She has been invited to international conferences (Ars Electronica Festival Linz, WDCD Festival Mexico City, Istanbul Design Summit, Detroit Socio Design Symposium, ...) and universities (University of Ljubljana, Technical University of Valencia, Hubei Institute of Fine Arts Wuhan, ESAD Porto, Özyegin University Istanbul) as a speaker and workshop leader. Her most recent publication was with Karl Stocker, "Designing Sustainable Cities. Manageable approaches to make urban spaces better" (2020).

Luka Fatović graduated in 2015 from the Faculty of Architecture in Zagreb. Following graduation, he was employed in the architectural studio AB Forum where he worked for Iva Letilović and Igor Pedišić as a collaborator on a series of projects such as: Mali Arsenal - HERA Visitor Centre in Zadar, 4 Houses for 4 Brothers in Zadar and the Providur Palace in Zadar – a project that received the Viktor Kovačić Award for the most successful architectural achievement in 2021. Since 2019, he has been employed in the architectural studio Roth & Čerina. He lives and works in Zagreb.

Valentin Graillat is a PhD design student at ENS Paris-Saclay. He is currently conducting a practice-based dissertation, focused on the concept of "smart homes," and investigates the role of technological dreams and past-future imaginaries in the evolution of the home. His works borrow from the STS (Science Technology and Society) field and counterfactual design approaches to develop alternative presents and more sustainable domestic models. More recently, he was a member of the scientific committee for the "A la limite, innover à la mesure du monde" French exhibition, supervised by astrophysicist Rolland Lehoucq.

Francesco E. Guida. Neapolitan and Associate Professor at the Department of Design (Politecnico di Milano), he is the Secretary of the Communication Design Courses, where he teaches visual communication design. With a PhD in Design and Technologies for Enhancement of Cultural Heritage, he has been involved in visual communication since the early 1990s. Past board member of AIAP (Italian Association of Visual Communication Design), he is the coordinator of the Graphic Design Research Centre (AIAP CDPG). Starting from 1997, he has published regularly in journals, books and conference proceedings on topics such as the history of graphic design, visual identities, wayfinding and speculative design. Previously Associate Editor of the journal "AIS/Design. Storia e Ricerche" (with which he gained an Honourable Mention at the XXVII Compasso d'Oro Award for the issue 12/13, 2020, entitled "Social Design. Design and the Common Good"), he is an editorial board member of "PAD. Pages on Arts and Design".

Harriet Harriss is a researcher at Pratt Institute and a former Dean of the Pratt School of Architecture in New York. She led the Architecture Research Programs at the Royal College of Art in London. Her teaching, research, and writing focus on pioneering new pedagogic models for design education, and for widening participation in architecture to ensure it remains as diverse as the society it seeks to serve. Harriss has won various awards including a Brookes Teaching Fellowship, a Higher Education

Academy Internationalisation Award, a Churchill Fellowship, two Santander Fellowships, two Diawa awards, and a NESTA (National Endowment for Science Technology and Art) Pioneer Award. Harriss was awarded a Clore Fellowship for cultural leadership (2016–17) and elected to the European Association of Architectural Education Council in 2017.

Vedran Kasap works as an Associate Professor at the University of Zagreb, Faculty of Architecture, School of Design, where he leads the courses of interaction design, elements of motion graphics, design of motion graphics and creative laboratory. He is founder and CEO of Clinica Studio Ltd. since 2012, which is a leading design studio in the area of spatial design, museum exhibitions and interaction design. As the main expert for product design and interaction design, he participates in the World Bank project that deals with raising the quality of interpretation and communication of nature as part of Croatian Parks integration project in the EU Natura 2000. As a member of the consortium, he participates in the design of visitor centres, signage systems, interpretation, and branding of parks. The projects in which he participated as a co-author have won numerous awards and recognitions (The Exhibition of Croatian Design ZGDW, Big See, German Design Award, European Design Award).

Boštjan Botas Kenda is a Full Professor of Visual Communication at the Academy of Fine Arts and Design, University of Ljubljana, Slovenia. Botas Kenda graduated at the IED in Milan, Italy. He also teaches visual communication at the Faculty of Architecture and at the Faculty of Computer Sciences. He is the founder and partner of studiobotas, a graphic design studio which concentrates on book design and signage in public space. He chaired a commission to prepare a National Strategy Paper on Design. He was Vice-rector for Art and Creativity at the University of Ljubljana, Dean of Academy of Fine Arts and Design, and Head of Department of Visual Communication at the Academy of Fine Arts and Design. He is cooperative in promoting practice-based research and design-driven

doctorate through CA²RE, ADAPT-r (PRS) and a Doctorate Programme in Art at the University of Ljubljana. Botas is co-founder of the multidisciplinary Design+Science Summer School.

Emil Kozole is a designer based in Ljubljana who works with emerging technologies. After finishing his MA in communication design from Central Saint Martins in London, he co-founded the Ljudje design studio and Freštreš art collective. His work has been commissioned and exhibited internationally and featured in magazines such as Wired, Le Monde, and Der Spiegel. He teaches at the Academy of Fine Arts and Design at the University of Ljubljana.

Niko Mihaljević is a visual artist and a graphic designer. His work includes a 130-year long musical performance, a conceptual karaoke whistling piece, founding the Museum of the Crystal Skull and publishing a philosophical dialogue proving that a small island in the Adriatic is indeed land surrounded by water. He graduated at the Werkplaats Typografie (ArtEZ Institute of the Arts) in Arnhem, the Netherlands. He received the Radoslav Putar Award (Young Visual Artists Awards) for the best young Croatian artist. He is an independent graphic designer and an Assistant Professor at the Media Design department of University North in Croatia, where he teaches typography, graphic design, experimental publishing, visual arts and sound design.

Ivica Mitrović is the Associate Professor and Head of the Department of Visual Communications Design at the Arts Academy University of Split. Since 2001 he has been dealing with the reflexive role of design in society via critical and speculative design practice. Together with Oleg Šuran, he was the curator for the presentation of the Republic of Croatia at The XXI International Exhibition of the Triennale di Milano (2016). He also co-edited the accompanying booklet "Speculative – Post-Design Practice or New Utopia?". He was vice president of the Croatian Designer Association and a steering committee member (2013–2016). Recently he was the coordinator of

the Erasmus+ project SpeculativeEdu (2018–2021) with the aim to strengthen speculative design education. He is co-editor of the book "Beyond Speculative Design: Past – Present – Future" (2021) published within the project. His work has been presented internationally, including Triennale di Milano, BIO Ljubljana, Vienna Biennale and MIT Press.

Lígia Oliveira is an artist, designer and researcher, whose work is centred on the relationship between humans and nature. Oliveira's interdisciplinary, multi-scale work is rooted in research and in a phenomenological approach, and extends across the visual arts, essay, poetry, scientific investigation and design. Oliveira studied Product Design (Esad, Matosinhos) and holds a PhD in Public Space and Urban Regeneration from the University of Barcelona, where she was a researcher; and Professor at the University of Oporto. Lígia Oliveira is the author of several scientific papers and co-editor of the book "The Economy of the Artist" (Braço de Ferro). Oliveira was awarded the 3rd prize in Urban Furniture by the Antwerp City Council & Havenhuis (co-author) and the 2nd prize in Illustration by the Matosinhos City Council. She is a member of the Design+Posthumanism Network and of Rise Up, and her work has been exhibited mostly in Europe.

Open Forest Collective is a multi-disciplinary, multi-species group of creative practitioners and researchers experimenting with feral approaches to engaging with forests and forest data. The Collective's creative activities – experimental walking, drifting, storytelling, and co-creation of feral forest datasets – bring together scientists, artists, citizens, policymakers, Indigenous-forest guardians, as well as dogs and trees in an experiential exchange of their diverse forest experiences and knowledge. The work is distributed across different locations, including (what is known today as) Finland, Australia, the Czech Republic, and Colombia. Current members of the Collective include Andrea Botero, Markéta Dolejšová, Jaz Heejeong Choi and Chewie.

Nejc Prah is a Slovenian designer. He works with a wide range of clients, occasionally teaches at the Academy in Ljubljana and often gives workshops and lectures in various institutions around the world. He collaborates with Ansambel, a network of designers, illustrators, animators and photographers. Nejc worked as an Art Director at Bloomberg Businessweek in New York before starting his own studio in Ljubljana in 2019. He earned an MFA from Yale School of Art in 2015.

Mia Roth & Tonči Čerina have been working together since 1999, participating in public architectural competitions in which they have won numerous awards. They design in different scales, from urbanism to interiors, have held numerous lectures on their work and activities, led extra-curricular workshops and participated in festivals and architectural exhibitions. In 2008, they were nominated for the Viktor Kovačić Award, which they won in 2019. In 2020, they were awarded the Grand Prix of the Architecture salon in Novi Sad and the Fresh&bold award of the Days of Architecture in Sarajevo. In 2021, they received the 2nd prize of the Balkan Architectural Biennale, and in 2022, they were awarded the BIG SEE Grand Prix in the Landscape and public space category in Ljubljana, the Bernardo Bernardi Award of the Association of Croatian Architects and the Plan Award in Milan. They received recognitions at the Vizura Aperta festivals in 2016 and 2018, and their work has received nominations for other international awards (Dezeen, Architizer, Piranesi, Mies van der Rohe). They are both engaged in education: Mia is a Professor at the Faculty of Architecture in Zagreb, and Tonči is an visiting assistant at the Faculty of Civil Engineering, Architecture and Geodesy in Split.

Michael Smyth is a Professor in the Interaction Design Research Group, Edinburgh Napier University, UK. He researches and teaches in the fields of interaction design and human computer interaction and is intrigued by the space between people and technology. He is a Co-Director of the Edinburgh Creative Informatics Partnership funded under the UKRI Creative Industries Clusters Programme

(CICP) and managed by the UK's Arts and Humanities Research Council (AHRC). Previously, he was a Primary Investigator on the SpeculativeEdu project funded by Erasmus+, the MAZI Project funded under the EU H2020 CAPSSI initiative, and the Primary Co-ordinator of the UrbanIxD project funded under FET Open.

Mladen Šolić holds a PhD in biological sciences from the Faculty of Science at the University of Zagreb in 1993. He is a scientific advisor with tenure at the Institute of Oceanography and Fisheries in Split, where he heads the Laboratory of Microbiology, and a Full Professor of ecological subjects at the Universities of Split and Zagreb. From 2002 to 2011, he was the head of the Marine Biology and Ecology study program at the University of Split. He has published more than 150 scientific and professional papers and 11 books. He has popularised various ecological topics through several popular science books. He is a member of several international organisations for marine research and conservation. In 2006, he received the award of the Croatian Academy of Sciences and Arts for the highest scientific achievements in natural sciences and mathematics in the Republic of Croatia.

Oleg Šuran (from Pula, Croatia) works as an associate at the Department of Visual Communications Design at Arts Academy University of Split, as an Assistant Professor of visual communication and interaction design. He holds a BA in Visual Communication and an MA in New Media Design. Together with Andi Pekica and Oleg Morović, he runs AO Fazan, Polet, nakonjusmo.net portal, and Fazan-Fonts type foundry. He runs workshops in the field of communication, interaction and speculative design. Oleg has also participated in multiple group and solo shows both in Croatia and abroad.

Olivier Troff is a researcher in design at ENS Paris-Saclay and an instructor in a BA in scenography and exhibition design in Paris. He is currently conducting a practice-based dissertation entitled "Shared Landscape Cultures and the Design of Interactions" at the Centre de

recherche en design, which explores interaction design and landscape research. His research merges the fields of design, landscape design, architecture, and photography via a practice aimed at being itinerant, experimental, and radical. He is published in the 2018 collective book “Notre-Dame-des-Landes ou le métier de vivre” (“Notre-Dame-des-Landes or the profession of living”) featuring an architectural anthropology of protest movements’ settlements in France. More recently, he published a landscape study of the hinterland of Singapore in Les Carnets du Paysages.

Ozana Ursić graduated at the Faculty of Architecture, School of Design in Zagreb, majoring in industrial design. Since 2012, she has been working with Clinica studio as a collaborator on design project exhibitions, scenography, and spatial design. In cooperation with the Clinica studio, she worked on the implementation of the interpretation and communication of the Croatian Parks integration project in the EU Natura 2000. She participates in numerous international exhibitions and workshops. In 2017, she received the status of an independent artist from the Croatian Association of Independent Artists. The projects in which she participated as a co-author have won numerous awards and recognitions (The Exhibition of Croatian Design ZGDW, Big See, German Design Award, European Design Award).

PARTICIPANTS

Milano

Mona Abolghasemi
Nima Ahmadi
Bianca Bauer
Denise Beretta
Valentina Bettoni
Luca Bottani
Claire Capone
Noemi Capparelli
Mara Castiglioni
Alice Cecchinato
Matilde Cirafici
Martina Conte
Federico Corbani
Giulia Costanzo
Francesca Curati
Carla D’Antonio
Stella Dondero
Carmen Framiñan Galán
Bianca Forte
Elena Giusti
Kseniia Havrylova
David Hazan
Giovoni Lorenzo
Silvia Lucesole
Helena Maciukiewicz
Fatemeh Maher
Oasis Mignot
Beini Mo
Alessio De Nicolò
Malena Paz del Zotto
Giada Piazza
Claudia Pezzini
Wang Qin
Nicolas Raigoso
Giulia Romano
Zhou Shengnan
Luiz Carlos de Souza Junior
Yousef Taffal
Jovana Tešić
Yasemin Umac
Diego José Valdivieso Benavente
Li Ye
Tang Yuying
Zhu Yuhan
Anastasiia Zaiarniuk
Huajie Zhang

Ljubljana

Bianca Bauer
Katarina Babič Derenda
Niko Fernandez
Nia Gombač
Sofia Gonzalez Villalobos
Alexandra Kraler
Arthur de Liz Sperb
Jaanika Malla
Jaka Oman
Eva Popit
Nadja Reifer
Ana Laura Richter
Larissa Rodiga
Alexandra Samandarova
Riccardo Samsa
Kristina Selinski
Gabriela Semanová
Eva Šmigoc

Lonjsko polje
Nastja Ambrožič
Bethany Copsey
Aleksandra Drecun
Inés Fernández Elhordoy
Sara Gurdulić
Maria-Dolores Heinrich
Sarah Kilkenny
Anna Martić
Petra Matić
Ela Meseldžić
Laura Middlehurst
Sylwia Mieczkowska
Korana Mileusnić
Ella Papenfus
Ebba Pijl
Meda Retegan
Cristina Sanuy Hereter
Daniella Ruffino
Sonia Turcotte

Motovun
Stela Brkić
Nika Čerina
Klara Čopec
Helena Hlišć
Karmen Ivančić
Bartul Krivić
Alen Marković
Nikolina Meter
Dora Mihinjač
Lucija Nemeth
Matej Orkić
Viktorija Paljug
Petra Pedišić
Slavko Petek
Fran Polan
Eva Rezar
Luka Nera Sibila
Sandi Terzić

Split
Miloš Ćosović
Tina Dernovšek
Leticia Fernández Alonso
Tico Fuentes
Segor Garber
Nia Gombač
Petter Habostad
Jelena Ivančević
Ana Ivanović
Dejana Ivošević
Mojca Krivec
Isidora Nikolić
Bansi Patel
Eva Popit
Katarina Popović
Julija Radosavljević
Stefan Raičević
Katarina Stanojlović
Urban Šelj
Magdalena Štibohar
Žiga Vavričuk
Anže Zajc
Iva Žmirak

La Biennale di Venezia

18. Mostra Internazionale di Architettura

Partecipazioni Nazionali

Project info:

Same as it Ever Was
Croatian Pavilion at the 18th International Architecture Exhibition – La Biennale di Venezia
May 20th 2023 – November 26th 2023

Curators:

Mia Roth and Tonči Čerina

Authorial team:

Mia Roth, Tonči Čerina, Luka Fatović, Vedran Kasap, Ozana Ursić, Niko Mihaljević, Ivica Mitrović

Commissioner:

Ministry of Culture and Media of the Republic of Croatia – Minister Nina Obuljen Koržinek

Production:

Croatian Architects' Association – Roman Šilje, Frano Petar Zovko, Morana Matković, Diego Carpentiero; Ministry of Culture and Media of the Republic of Croatia – Nevena Tudor Perković

Website:

www.sameasiteverwas.hr

Project partners & sponsors:

Zagreb Tourist Board, Croatian Post Inc., Markoja production, trade and services d.o.o., JANAF d.d., Hrvatske autoceste d.o.o., Zagrebačka banka d.d., Lonjsko Polje Nature Park Public Institution, Zumtobel Group Croatia

Special thanks to:

Roman Šilje, Frano Petar Zovko, Ivor Stanivuković, Damir Culjak, Karlo Kiš

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HRVATSKE AUTOCESTE

Zagrebačka banka
UniCredit Group

LONJSKO POLJE
Park prirode
Nature Park

ZUMTOBEL

Title:
Designing in Coexistence – Reflections on Systemic Change
Publisher:
Croatian Architects' Association – Roman Šilje, president
In collaboration:
Ministry of Culture and Media of the Republic of Croatia, Arts Academy (University of Split), Faculty of Architecture (University of Zagreb), Faculty of Architecture – School of Design (University of Zagreb), Faculty of Civil Engineering, Architecture and Geodesy (University of Split), Department of Media Design (University North)
Distribution:
Croatian Architects' Association
Production:
Croatian Architects' Association
Editors:
Ivica Mitrović, Mia Roth, Tonči Čerina
Executive editor:
Morana Matković
Contributors:
Martín Ávila, James Auger, M Buonincontri, Sigrid Bürstmayr, Luka Fatović, Valentin Graillat, Francesco E. Guida, Harriet Harris, Vedran Kasap, Boštjan Botas Kenda, Emil Kozole, Niko Mihaljević, Ivica Mitrović, Lígia Oliveira, Open Forest Collective (Andrea Botero, Markéta Dolejšová, Jaz Hee-jeong Choi and Chewie), Nejc Prah, Mia Roth & Tonči Čerina, Michael Smyth, Mladen Šolić, Oleg Šuran, Olivier Troff, Ozana Ursić
Translation & proofreading:
Jasna Perić (Italian), Elemento Content d.o.o. (English)
Design & layout:
Niko Mihaljević
Photography, videostills & visuals:
Jasminka Babić, Maja Bosnić and Ivan Dorotić (Bosnić+Dorotić), Tonči Čerina, Jiři Dolejš, Marketa Dolejšova, Aleksandra Drecun, Feral drifters (workshop participants), Hrvoje Franjić, Harriet Harriss, Tine Lisjak, Marko Mihaljević, Ivica Mitrović, Open Forest Collective, Lígia Oliveira, Mia Roth, Michael Smyth, Ozana Ursić, Vicko Vidan, Ante Žuljević
Book partner & sponsor:
Hörmann Croatia d.o.o
Print:
Kerschoffset d.o.o., Zagreb, 2023
Printed and bound in the European Union.
Print run: 1000

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This publication is made possible by the financial support of the Ministry of Culture and Media of the Republic of Croatia and Hörmann Croatia d.o.o.

Edition: 1st

The CIP record is available in the computer catalogue of the National and University Library in Zagreb (NSK) under number 001203470.

ISBN 978-953-6646-31-9 (Croatian Architects' Association)

Price: 10 EUR

Zagreb, 2023

Republika Hrvatska Ministarstvo kulture i medija
Republic of Croatia Ministry of Culture and Media

1878

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REFLECTIONS ON SYSTEMIC CHANGE